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Technical Memorandum 86087

DEVELOPMENT OF BASELINE RANDOM VIBRATION ENVIRONMENT CRITERIA FOR SHUTTLE PALLET PAYLOAD SUBSYSTEMS

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NASA/GODDARD SPACE FLIGHT CENTER

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PREFACE

This report presents a statistical evaluation of measured random vibration response data obtained from the Office of Space Science-1 (OSS-1) pallet payload. The data were measured during the acoustic test simulation (September 1980) and the ascent phase of the flight of Space Transportation System-3 (STS-3), Orbiter 102 (launched from the Kennedy Space Center on March 22, 1982). Acoustic test efficiency factors are evaluated based on the Dynamic, Acoustic and Thermal Environments (DATE) instrumentation as the source of the measured vibration data. Test efficiency correction to test data is applied in the extrapolation of non-DATE acoustic test data to increase sample population size for improved statistical evaluation. For baseline criteria evaluation and development, data are grouped in accordance with the payload "zone" in which the subsystem is mounted. The results of this study are documented as part of the NASA DATE program activity.

NOMENCLATURE

ASD	acceleration spectral density (g^2/Hz)
SPSD	sound pressure spectral density (psi^2/Hz)
1/3OB	1/3 octave band
AL	acceleration level (dB)
SPL	sound pressure level (dB)
ASDL	acceleration spectral density level (dB)
SPSDL	sound pressure spectral density level (dB)
Δf	1/3 octave bandwidth (Hz)
E.F.	acoustic simulation efficiency factor (dB)
μ_i	average of the i th quantity
σ_i	standard deviation of the i th quantity

TABLE OF CONTENTS

	PAGE
PREFACE - - - - -	ii
NOMENCLATURE - - - - -	ii
1. INTRODUCTION - - - - -	1
2. EXTRAPOLATION OF TEST DATA - - - - -	1
2.1 Extrapolation Method - - - - -	1
2.1.1 Normalization Method - - - - -	2
2.1.2 Acoustic Simulation Efficiency - - - - -	2
2.2 Extrapolation Uncertainties - - - - -	3
2.3 Equivalent Flight Data - - - - -	4
3. EVALUATION OF DATA - - - - -	5
3.1 Zone Definition - - - - -	5
3.2 Probability Levels - - - - -	6
4. RANDOM VIBRATION CRITERIA DEVELOPMENT - - - - -	6
5. CONCLUSIONS - - - - -	7
6. REFERENCES - - - - -	8
APPENDICES	
A.1 Accelerometer/Microphone Locations - - - - -	A.1.1
A.2 Zone 2 STS-3 Flight Equivalent Test Data - - - - -	A.2.1
A.3 Zone 3 STS-3 Flight Equivalent Test Data - - - - -	A.3.1
A.4 Zone 4 STS-3 Flight Equivalent Test Data - - - - -	A.4.1
B. Statistics of STS-3 Flight Equivalent Test Data	
B.1 Zone 2 Statistics - - - - -	B.1.1
B.2 Zone 3 Statistics - - - - -	B.2.1
B.3 Zone 4 Statistics - - - - -	B.3.1
C. Sample Comparisons of Bandwidth Effects on Acceleration Spectral Density - - - - -	C.1

LIST OF FIGURES

<u>FIGURE NO.</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1	OSS-1 Payload Configuration - - - - -	9
2	OSS-1 Payload Acoustics - - - - -	10
3	Acoustic Test Efficiency Factor - - - - -	11
4	Acceleration Spectral Density- 97.73% Probability Level for Zone 2 - - - - -	12
5	Acceleration Spectral Density- 97.73% Probability Level for Zone 3 - - - - -	13
6	Acceleration Spectral Density- 97.73% Probability Level for Zone 4 - - - - -	14
7	Baseline Random Vibration Environment Criteria for Zone 2 - - - - -	15
8	Baseline Random Vibration Environment Criteria for Zone 3 - - - - -	16
9	Baseline Random Vibration Environment Criteria for Zone 4 - - - - -	17
10	Baseline Random Vibration Environment Criteria for Zone 1 - - - - -	18

LIST OF TABLES

<u>TABLE NO.</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1	Estimated Variances - - - - -	19
2	Baseline Random Vibration Environment Criteria for Shuttle Pallet Payload Subsystems - - - - -	20

1. INTRODUCTION

This report presents a statistical evaluation of measured random vibration response data obtained from the Office of Space Science-1 (OSS-1) pallet payload (see figure 1). The data were measured during the acoustic test simulation (September 1980) and the ascent phase of the flight of STS-3, Orbiter 102 (launched from the Kennedy Space Center on March 22, 1982). Acoustic test efficiency factors are evaluated based on the Dynamic, Acoustic and Thermal Environments (DATE) instrumentation as the source of the measured vibration data. Test efficiency correction to test data is applied in the extrapolation of non-DATE acoustic test data to increase sample population size for improved statistical evaluation. For baseline criteria evaluation and development, data are grouped in accordance with the payload "zone" in which the subsystem is mounted. A subsystem is defined as a functional subdivision of a payload consisting of two or more components (e.g., attitude control, electrical power and communication subsystems, and instruments).

The flight and acoustic test data required to perform this evaluation were acquired and produced as part of the DATE program activity. The DATE data were obtained from twelve high frequency (5-2K Hz) accelerometers and five microphones at identical locations on the payload during the acoustic test and worst case flight event during the lift-off phase. The non-DATE data also used in this evaluation corresponded to data obtained during the system level acoustic test of the OSS-1 pallet payload which was conducted in the NASA-GSFC 40K cubic foot acoustic noise test facility and extrapolated to the STS-3 flight acoustic environment. The payload related vibration data obtained during the STS-3 flight were acquired and reduced as part of the DATE Experiment activity (reference 1). All the acoustic test data were recorded and reduced by the NASA-GSFC.

In general, all data were acquired via a series of high frequency accelerometers which measured the vibration response at selected experiment shelves and panels and at the base of selective instruments (see Appendix A). A series of microphones measured the acoustic levels at various locations around the OSS-1 payload, such as, in the vicinity of the Thermal Canister Experiment (TCE), the experiment shelf on the forward starboard and aft port side of the payload, and on the forward center of the payload in the vicinity of the vertical shelf. One microphone measured the acoustic level transmitted to the inside of the TCE. The spatial average of the four DATE microphones (excluding the microphone inside the TCE) and the spatial average of the six non-DATE microphones used for control of the test chamber input acoustics are shown in figure 2.

2. EXTRAPOLATION OF TEST DATA

2.1 Extrapolation Method

Since the GSFC acoustic test of the OSS-1 pallet payload was performed with an input acoustic spectrum different from that measured during STS-3 flight, the acoustic test vibration data must be extrapolated to the STS-3 flight measured payload bay acoustic environment on the payload. The method used to extrapolate the acoustic test data so as to be "equivalent" to the measured flight vibration data consisted of:

o Normalizing the test data to the flight measured payload bay acoustic environment.

o Correcting differences in acoustic simulation efficiency between test and flight.

2.1.1 Normalization Method

Consider the acceleration spectral density of an OSS-1 payload subsystem response to an acoustic test sound pressure of spectral density ($SPSD_{test}$) to be given by ASD_{test} . Under the assumption of vibration response linearity over acoustic test levels (reference 2), the normalized test vibration response (ASD_{test}^{norm}) resulting from the flight acoustic environment ($SPSD_{flight}$), can be obtained from the acoustic test data as follows:

$$ASD_{test}^{norm} = (ASD_{test} / SPD_{test}) \cdot SPD_{flight} \quad (1)$$

where $ASD/SPSD$ is termed the transfer function between vibration response and acoustic input, and the ASD and $SPSD$ are in consistent engineering units (e.g. g^2/Hz and psi^2/Hz). It follows that (1) can be written in terms of dB units in various forms:

In terms of 1/3 octave band levels,

$$1/3 \text{ OBAL}_{test}^{norm} = 1/3 \text{ OBAL}_{test} - 1/3 \text{ OBSPL}_{test} + 1/3 \text{ OBSPL}_{flight} \quad (2)$$

In terms of 1/3 octave bandwidth spectral density levels,

$$1/3 \text{ OBASDL}_{test}^{norm} = 1/3 \text{ OBAL}_{test}^{norm} - 10 \log \Delta f \quad (3)$$

where Δf is 1/3 octave bandwidth in Hz.

2.1.2 Acoustic Simulation Efficiency

A comparative evaluation of the OSS-1 pallet payload random vibration response data obtained by the DATE instrumentation during the STS-3 flight and the GSFC system level acoustic test (reference 2) indicates a difference in acoustic simulation efficiency between the flight and test acoustic environments. This difference is treated as follows:

Consider the acoustic simulation efficiency factor (E.F.) to be defined as

$$E.F. (dB) = 1/3 \text{ OBAL}_{test}^{norm} - 1/3 \text{ OBAL}_{flight} \quad (4)$$

From (2) and (4) the "equivalent" flight response is determined by

$$\text{"equiv." } 1/3 \text{ OBAL}_{\text{flight}} = 1/3 \text{ OBAL}_{\text{test}}^{\text{norm}} - \text{E.F.} \quad (5)$$

In terms of one-third octave bandwidth spectral density level in dB,

$$\text{"equiv." } 1/3 \text{ OBASDL (dB)}_{\text{flight}} = 1/3 \text{ OBAL}_{\text{test}}^{\text{norm}} (\text{dB}) - 10 \log \Delta f - \text{E.F. (dB)} \quad (6)$$

The conversion of the "equivalent" flight result of (6) in dB units to g^2/Hz units is accomplished via the relationship

$$\begin{aligned} \text{"equiv." } 1/3 \text{ OBASD}_{\text{flight}} (g^2/\text{Hz}) &= [1/3 \text{ OBASD}_{\text{ref}} (g^2/\text{Hz})] \\ &\quad \cdot [10^{0.1(1/3 \text{ OBASDL}_{\text{flight}} (\text{dB}))}] \end{aligned} \quad (7)$$

where $1/3 \text{ OBASD}_{\text{ref}} (g^2/\text{Hz})$ is the assumed reference value for $1/3 \text{ OBASDL (dB)}$.

2.2 Extrapolation Uncertainties

The basic data used to extrapolate the acoustic test vibration response data consisted of the following:

- a. Acoustic test chamber sound pressure levels.
- b. Flight payload bay sound pressure levels on OSS-1 pallet payload.
- c. Acoustic test vibration response at subsystem mounting locations on the payload.
- d. Acoustic simulation efficiency factors.

The acquisition and reduction of the basic data are subject to statistical uncertainties. The uncertainty in sound pressure levels on the payload in the acoustic test chamber and the orbiter payload bay are primarily the results of spatial variation within the test chamber and payload bay and the data reduction process. The uncertainty in the acoustic test payload vibration response is primarily due to data reduction. In addition, the flight vibroacoustic environment is truly nonstationary but is assumed to be piecewise stationary for data reduction purposes. The data from the STS-3 flight are not adequate in sample size to accurately determine the probability distribution function of these quantities for confidence limit evaluation. However, based upon past experience (references 1, 2, and 3) the values shown in table 1 for the variances of the pertinent data quantities can be assumed as uncertainties

to yield a first order estimate of percentage confidence limits. In general, the "K" percent confidence limits (at the 50 percent confidence level) for the true levels of any quantity are defined by:

$$\begin{aligned}\text{Upper K\% limit} &= \mu_i + k\sigma_i \\ \text{Lower K\% limit} &= \mu_i - k\sigma_i\end{aligned}\quad (8)$$

where,

$$K\% = (1 - \alpha) = K\text{th percentage point} \quad (9)$$

$k = t_m$; $\alpha/2 = \alpha/2$ percentage point of Student "t" variable
with m degrees of freedom

μ_i = sample average of the ith quantity

σ_i = sample standard deviation of the ith quantity

i = "normalized test data", "efficiency factor" or "equivalent flight data"

It follows that, since the extrapolated data are based on space averaged sound pressure levels:

μ_{norm} = Average of normalized test (i.e. normalization based on space averaged sound pressure levels)

$$\sigma_{\text{norm}} = (\sigma_{\text{Test Acous.}}^2 + \sigma_{\text{Flt. Acous.}}^2 + \sigma_{\text{Test Vibration}}^2)^{1/2} \quad (10)$$

$\mu_{\text{eff.fact.}}$ = Measured efficiency factor (i.e., efficiency factor based on average normalized test data and measured flight data).

$$\sigma_{\text{eff.fact.}} = (\sigma_{\text{norm}}^2 + \sigma_{\text{Flt.Vib.}}^2)^{1/2} \quad (11)$$

$\mu_{\text{equiv.flt.}}$ = Average of "Equivalent" Flight (i.e., based on space averaged sound pressure levels)

$$\sigma_{\text{equiv.flt.}} = (\sigma_{\text{norm}}^2 + \sigma_{\text{eff.fact.}}^2)^{1/2} \quad (12)$$

2.3 Equivalent Flight Data

The random vibration response of the payload subsystem mounting locations expected to occur during the STS-3 flight of the OSS-1 payload (i.e., "equivalent" flight data) was predicted by extrapolating the ground acoustic test vibration data based on the flight measured space average acoustic environment on the OSS-1 payload (figure 2) and the acoustic simulation efficiency factor (figure 3) (reference 2). These "equivalent" flight vibration data are presented in Appendix A.

3. EVALUATION OF DATA

The development of random vibration environment criteria for payload subsystems requires a statistical analysis of the "equivalent" flight data. This analysis involves certain numerical manipulations where statistical techniques are involved. As has been in the past, the flight data acquisition configuration from a statistical evaluation point of view is far from being ideal. Statistical treatment of the truly nonstationary flight data assumes the data to be a piecewise stationary random process. By invoking this assumption, numerical manipulations of the statistical analysis is simplified while still yielding sufficiently valid results. In addition, the varied concentration of measurements on payload subsystem mounting locations in certain regions of the payload bay during each flight presents a spatial biasing problem. To minimize these problems, the following procedure was adopted in the development of the baseline random vibration environment criteria for subsystems mounted on pallet payloads:

- a. Group the payload subsystem mounting locations into four payload mounting zones.
- b. Determine the acceleration energy-average and variance of the acceleration levels predicted in each zone.
- c. Assume flight variability in the zone accelerations to be same as flight variability for acoustics (reference 3).
- d. Determine the desired K percent probability levels for the acceleration energy density.
- e. Perform spectrum smoothing on the K percent probability levels.

3.1 Zone Definition

A zone is defined as a major area of the OSS-1 payload in which subsystems can be mounted. For the OSS-1 payload, the determination of a particular zone in which a subsystem was mounted is based on the following description:

Zone 1—Payload primary structure within proximity of the payload—orbiter vehicle separation plane.

Zone 2—Payload primary and secondary structure (exclusive of mounting brackets) not included in Zone 1.

Zone 3—Payload structures specifically designed for mounting of subsystems such as shelving, platforms, or brackets.

Zone 4—Payload large surface area light weight structures at outboard areas which respond primarily to acoustic pressure forces.

3.2 Probability Levels

For a sufficiently large sample size, the K percent probability level (at the 50 percent confidence level) for the flight average payload subsystem mounting zone acceleration spectral density level is:

$$K\% \text{ Prob.Level (dB)} = 10 \log [\bar{\mu}_f + 2\sigma_f] \quad (13)$$

where,

$\bar{\mu}_f$ = mean flight zone average acceleration spectral density

σ_f^2 = total variance (flight to flight plus zone average)

4. RANDOM VIBRATION CRITERIA DEVELOPMENT

In the development of baseline random vibration environment criteria for payload subsystems, only the worst-case flight events need to be considered. The worst-case flight events based on "30 day DATE reports" (reference 1) correspond to the lift-off and transonic events. In fact, the vibroacoustic levels at lift-off exceeded the levels at transonic flight in all frequency bands except in few narrow bands between 250 and 400 Hz (reference 3).

The NASA/GSFC philosophy in establishing vibroacoustic environment design and test criteria for payloads is to define the flight environment at the 97.73 percent probability level of occurrence. A baseline environment criteria recommended for payload subsystems should, therefore, be consistent with this philosophy.

The evaluation procedure described in Section 3 was applied to the worst-case lift-off event "equivalent flight" data (Appendix A) with the 97.73 percent probability level results for Zones 2, 3, and 4 presented in figures 4, 5 and 6, respectively. No data were evaluated for Zone 1. The results of figures 4 through 6 are subject to the launch vehicle configuration and conditions defined as the following:

- o OV-102 vehicle.
- o Launch from the Kennedy Space Center (KSC).
- o No thrust augmentation.
- o Full complement of thermal radiator panels.
- o Payload bay vents fully opened at all times.
- o Worst-case flight event at lift-off from T - 6 to T + 12 sec.

The results of figures 4 through 6 are presented in terms of 1/3OASDL (i.e., acceleration spectral density in dB based on 1/3 octave bandwidth $\Delta f_{1/3OB}$). This results from the fact that the acoustic levels used to extrapolate the "equivalent flight" data were given in 1/3OBSPL. The effect of the 1/3 octave bandwidth is increased smoothing over a more narrow bandwidth in spectral density analysis. This effect is not considered a significant

drawback in the development of the baseline criteria as is demonstrated by the sample comparisons of acceleration spectral density based on 1/3 octave bandwidth vs. 4 Hz bandwidth analysis shown in Appendix C.

A baseline environment criteria should represent a smoothed envelope of the 97.73 percent probability levels. Smoothing is required to provide a spectrum that will be reasonably independent of band to band variability since the variability will be highly sensitive to physical details of the payload complement within the payload bay.

The smoothed spectrums based on the 97.73 percentile levels of the 1/3 octave bandwidth ASDL at the subsystem Zones 2, 3, and 4 are shown in figures 7, 8, and 9, respectively. Because the vibration data from the ground acoustic tests (see Appendix A) were not applicable for extrapolating "equivalent" flight data for subsystems on payload Zone 1, the smoothed spectrums for Zone 1 near payload longeron trunnions and keel shown in figure 10 were based on information from reference 4. The spectrums of figures 7 through 10 and table 2, represent baseline random vibration flight environment criteria which can be applied to subsystems to be mounted on Shuttle pallet payloads.

The duration of the lift-off vibroacoustic environment will not exceed 15 seconds. Duration is defined as the total time over which the environmental levels are within 10 dB of the maximum. The duration of the transonic flight vibroacoustic environment will not exceed 30 seconds. Although the maximum expected flight acoustic environment occurs during the lift-off event except at a few frequency bands during transonic, a duration of 30 seconds is recommended for a baseline random vibration environment criteria based on the results of figures 7 through 10. This duration will insure that payloads are designed and tested to cover the environment during transonic flight until additional evaluation can be performed on the effects of payload bay venting.

5. CONCLUSIONS

The OSS-1 payload vibroacoustic measurements from the STS-3 flight of the OV-102 orbiter vehicle have been evaluated for the primary purpose of developing a baseline random vibration environment criteria for STS pallet payload subsystems. The evaluation was performed based on data from the two-worst-case flight events (i.e., lift-off and transonic flight) using acceptable statistical methods. The results of the statistical analysis has provided the required basis for producing baseline pallet payload subsystem vibration levels to be used for establishing STS payload design and test criteria consistent with the NASA/GSFC philosophy of a 97.73 percent probability level of occurrence for defining flight acceptance levels.

As the STS-3 flight carried only payload volumes totaling less than 10 percent of the total payload bay volume, the payload bay was essentially representative of an empty bay condition, or a bay with a small payload. Hence, the levels provided herein represent the current best prediction of the maximum expected random vibration level for pallet payload subsystems in the payload bay with a small payload (<9 feet in diameter). The effect of larger payloads remains a complex issue and highly configuration dependent. The unique criteria for such payloads should continue to be evaluated on an individual basis.

Based on the results of this study, the following recommendations are made:

a. The smoothed envelope random vibration spectrum (figures 7 through 9) based on the results of figures 4 through 6 and figure 10 are recommended to be used as the baseline random vibration environment for flight acceptance of pallet mounted subsystems on small STS payloads (less than 9 feet in diameter and displacing less than 25 percent of total payload bay volume).

b. Adjustment of the baseline random vibration environment to account for effects of larger payloads (greater than 9 feet in diameter and displacing greater than 25 percent of total payload bay volume) should continue to be treated on an individual basis.

c. For design qualification and certification of payload subsystem, 3 dB is to be added to flight acceptance levels.

d. If later data results in a change to the vibroacoustic environment, due to either changes in launch vehicle configuration or conditions, the baseline payload subsystem vibroacoustic environmental levels should be updated accordingly.

6. REFERENCES

1. A.F. White, J.A. Garba, et. al., "Payload Bay Acoustic and Vibration Data from STS-3 Flight", DATE Report 004, NASA, June 1982.
2. F.J. On, "Comparative Evaluation of Space Transportation System (STS)-3 Flight and Acoustic Test Random Vibration Response of the OSS-1 Payload", NASA-TM 85089, GSFC, September 1983.
3. F.J. On, "Evaluation of Space Transportation System (STS) OV-102 Orbiter Payload Bay Acoustic Environment", NASA-TM 84958, GSFC, December 1982.
4. JSC 07700, Space Shuttle Systems Payload Accommodations, Volume XIV, Attachment 1 (ICD 2-19001) Shuttle Orbiter/Cargo Standard Interfaces, Interface Revision Notice (IRN) JSC-048.

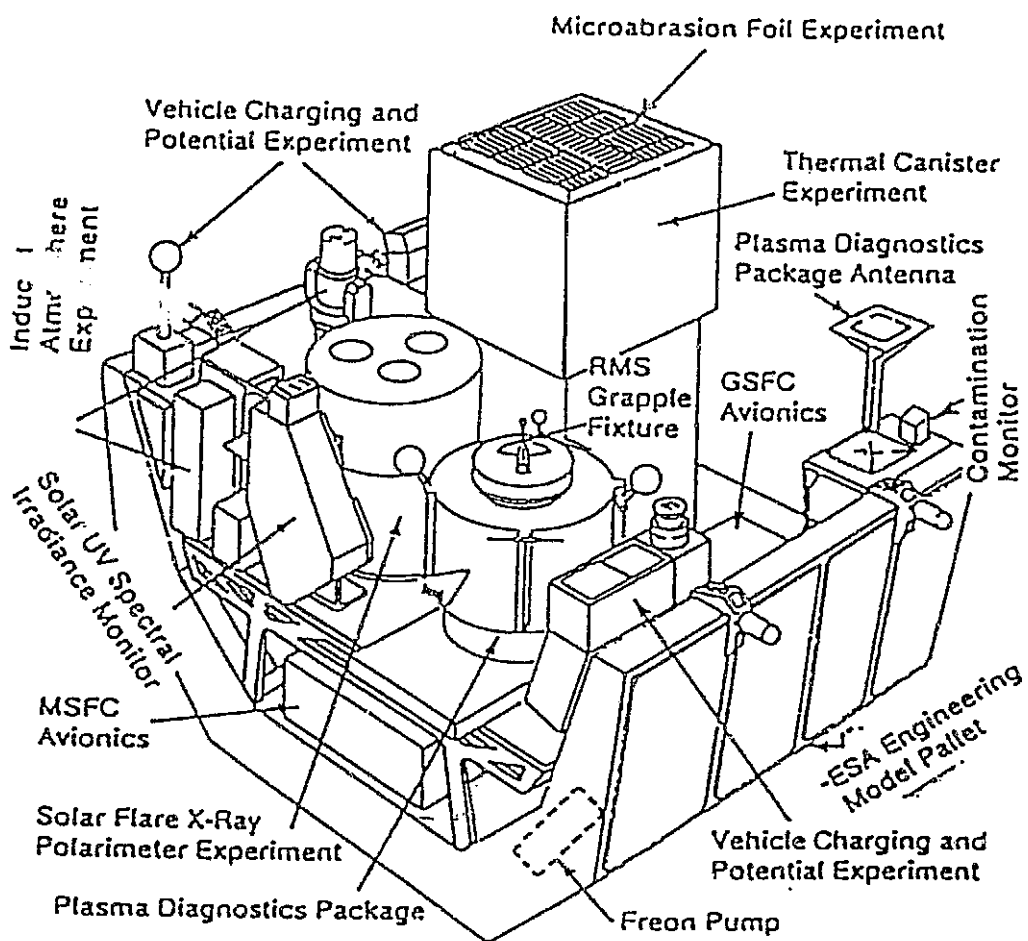


FIG.1 - OSS-1 PAYLOAD CONFIGURATION

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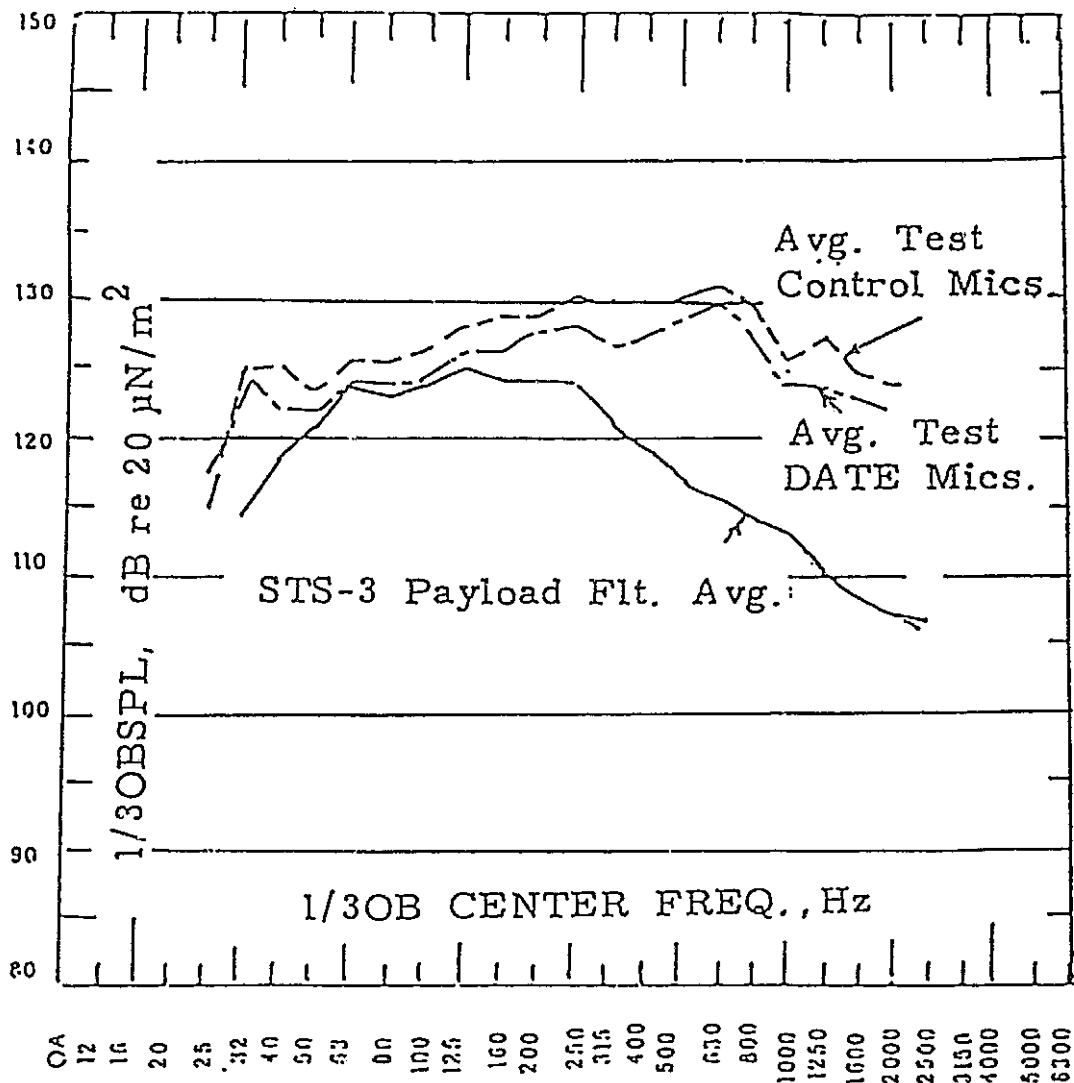


FIG. 2 - OSS-1 PAYLOAD ACOUSTICS

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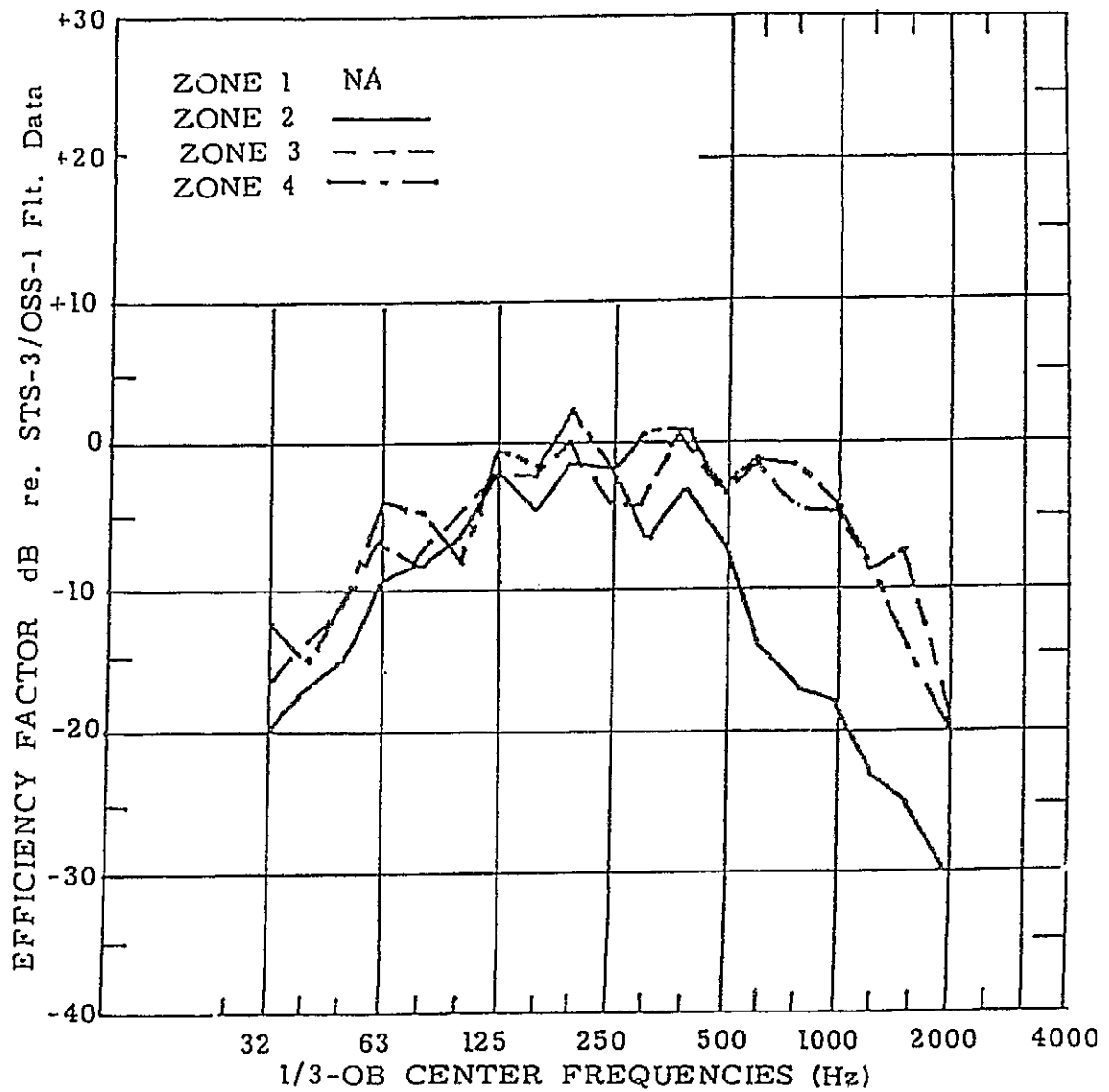


FIG. 3 - ACOUSTIC TEST EFFICIENCY FACTOR
(ALL AXES)

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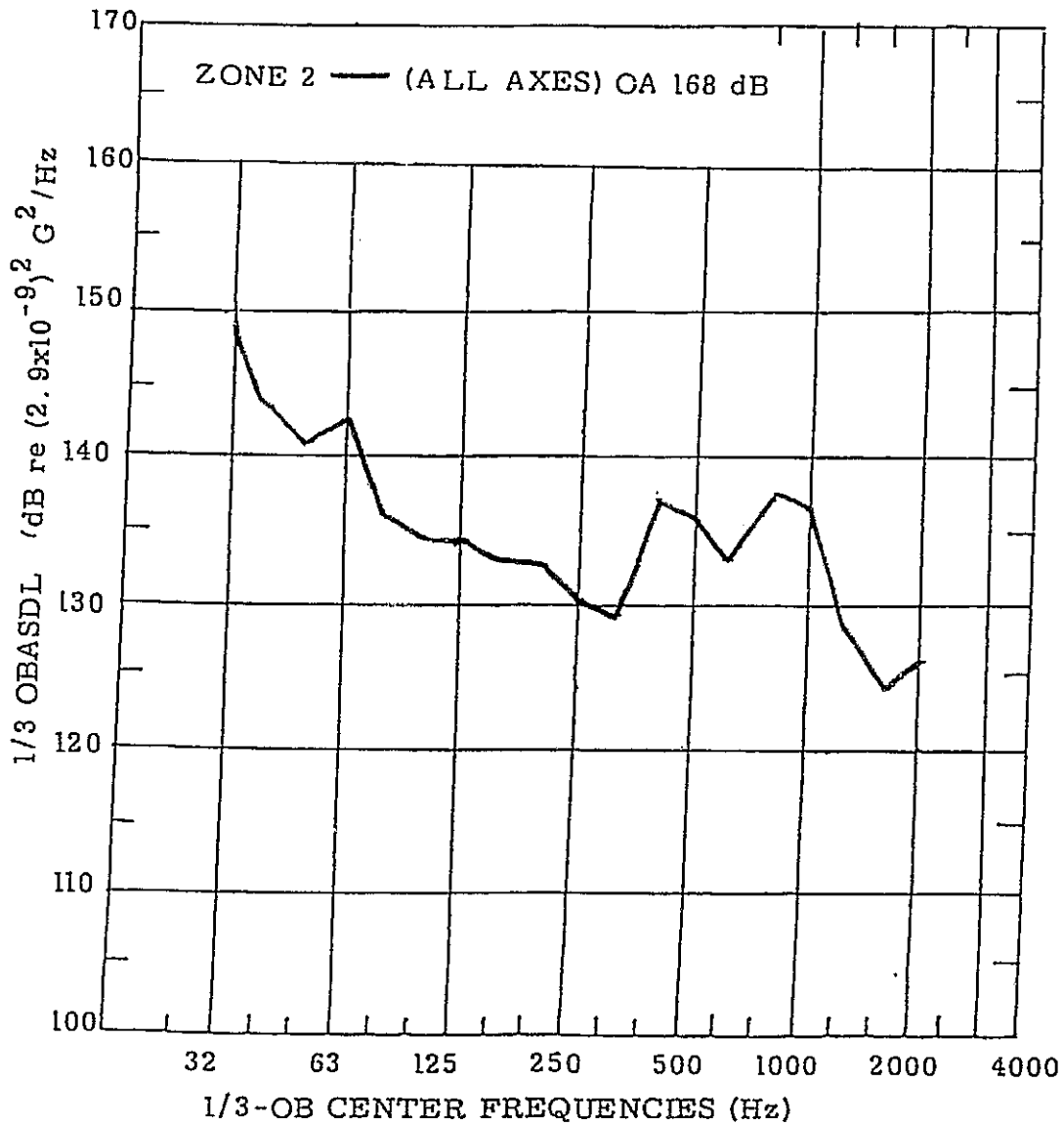


FIG. 4 -ACCELERATION SPECTRAL DENSITY LEVEL
97.73 % PROBABILITY LEVELS

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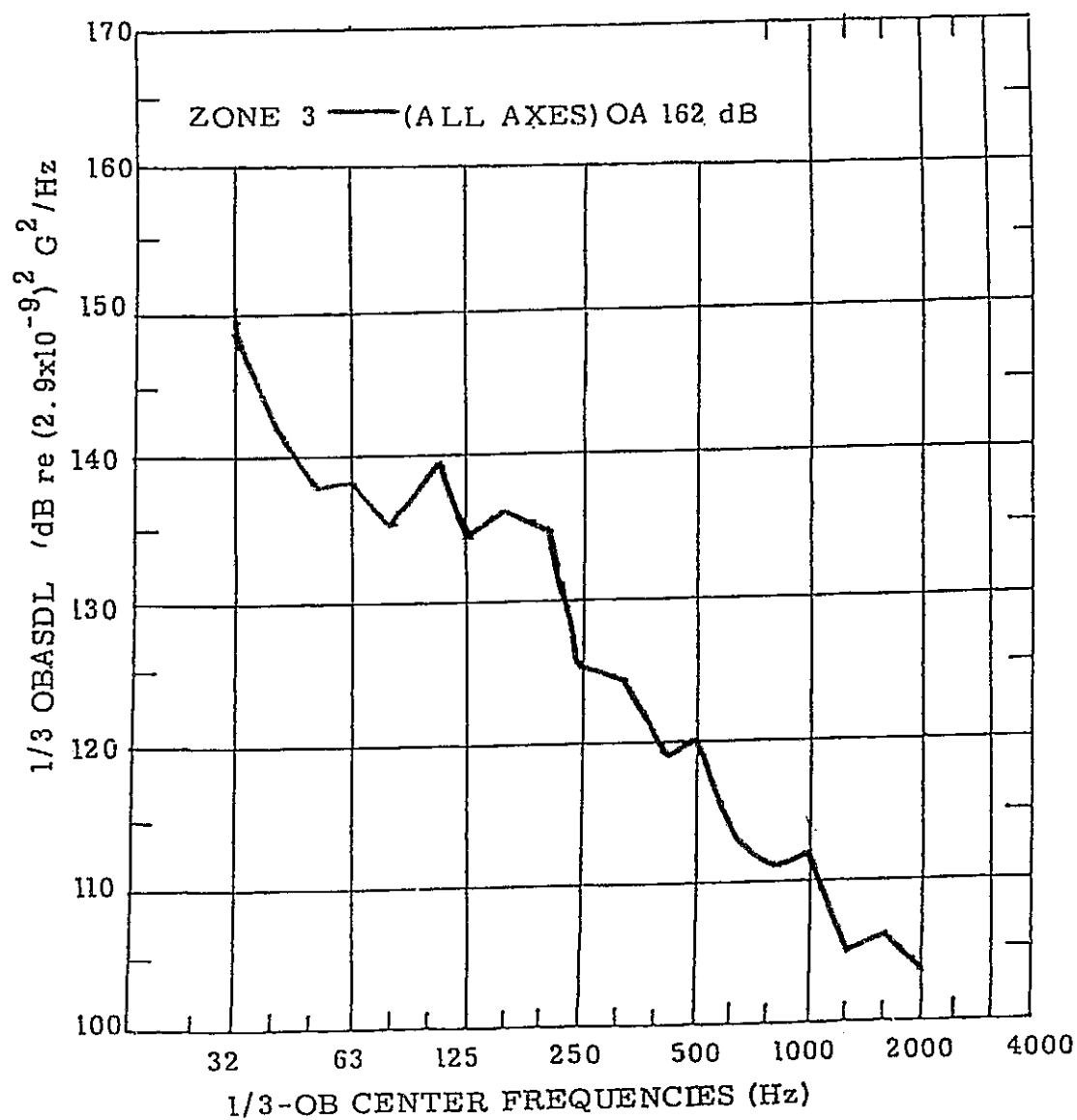


FIG. 5-ACCELERATION SPECTRAL DENSITY LEVEL
97.73 % PROBABILITY LEVELS

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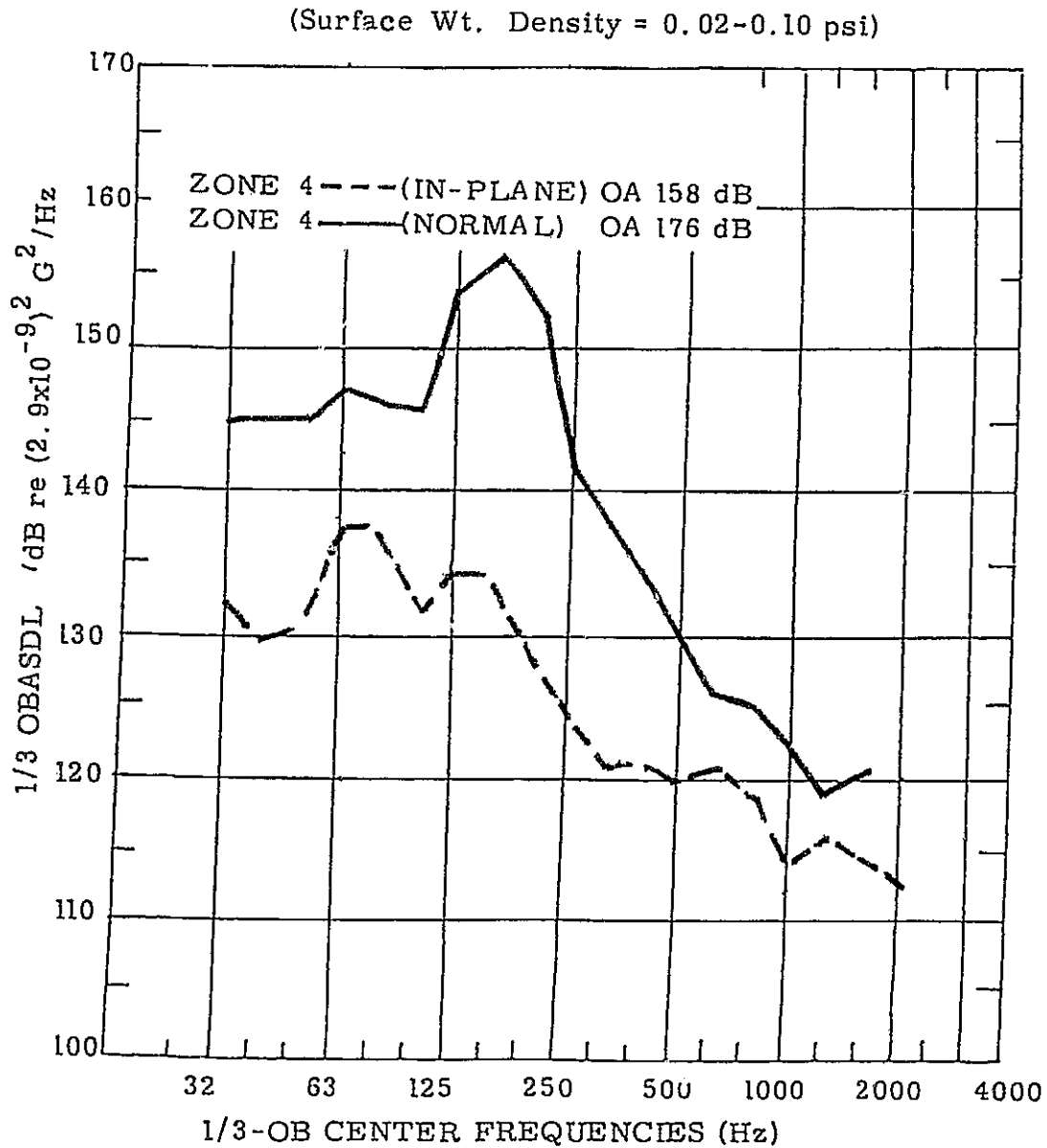


FIG. 6-ACCELERATION SPECTRAL DENSITY LEVEL
97.73 % PROBABILITY LEVELS

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ZONE 2 — (ALL AXES) OA=1.4 GRMS

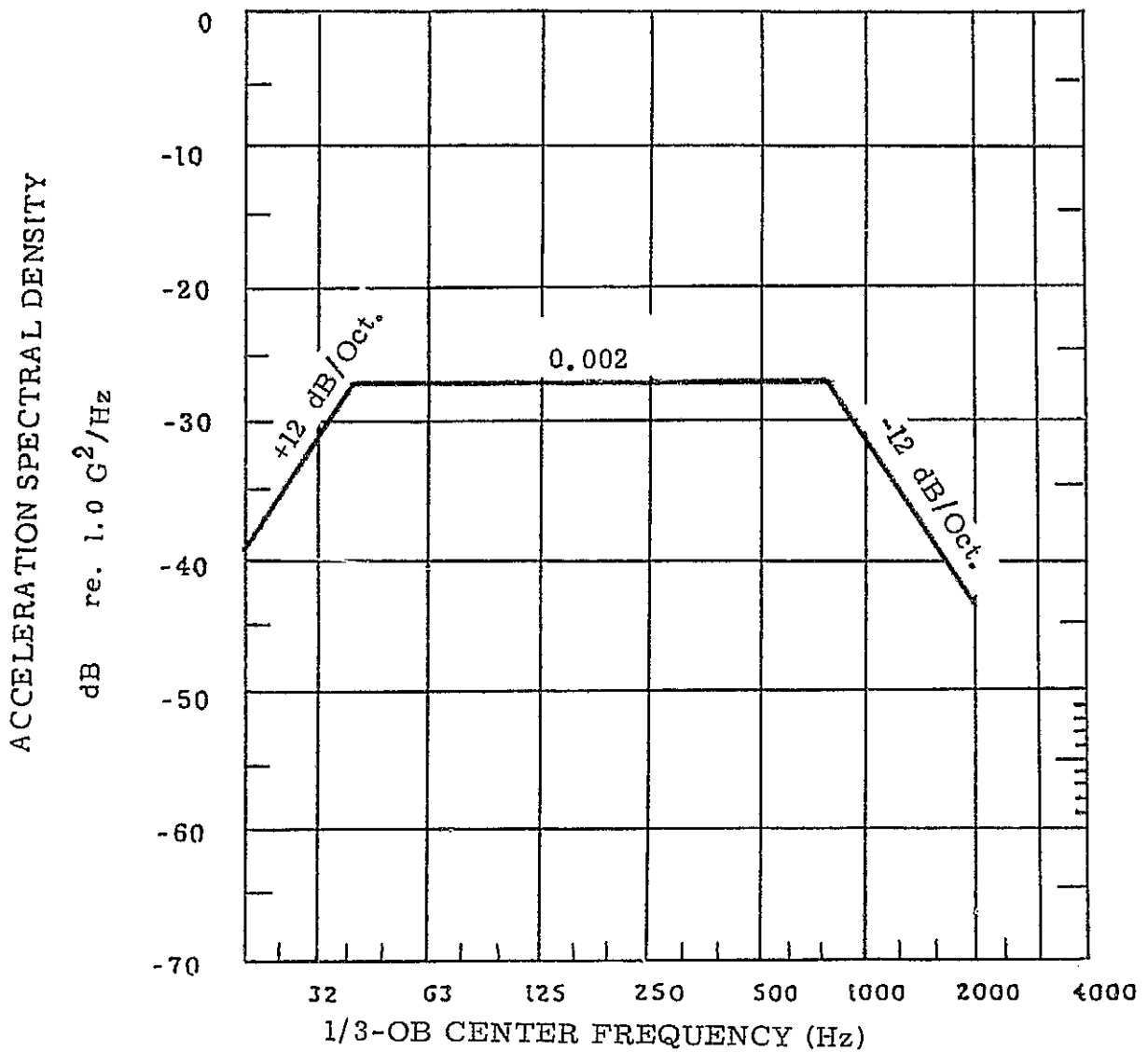


FIG. 7- BASELINE RANDOM VIBRATION ENVIRONMENT CRITERIA

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ZONE 3 --- (ALL AXES) OA=0.8 GRMS

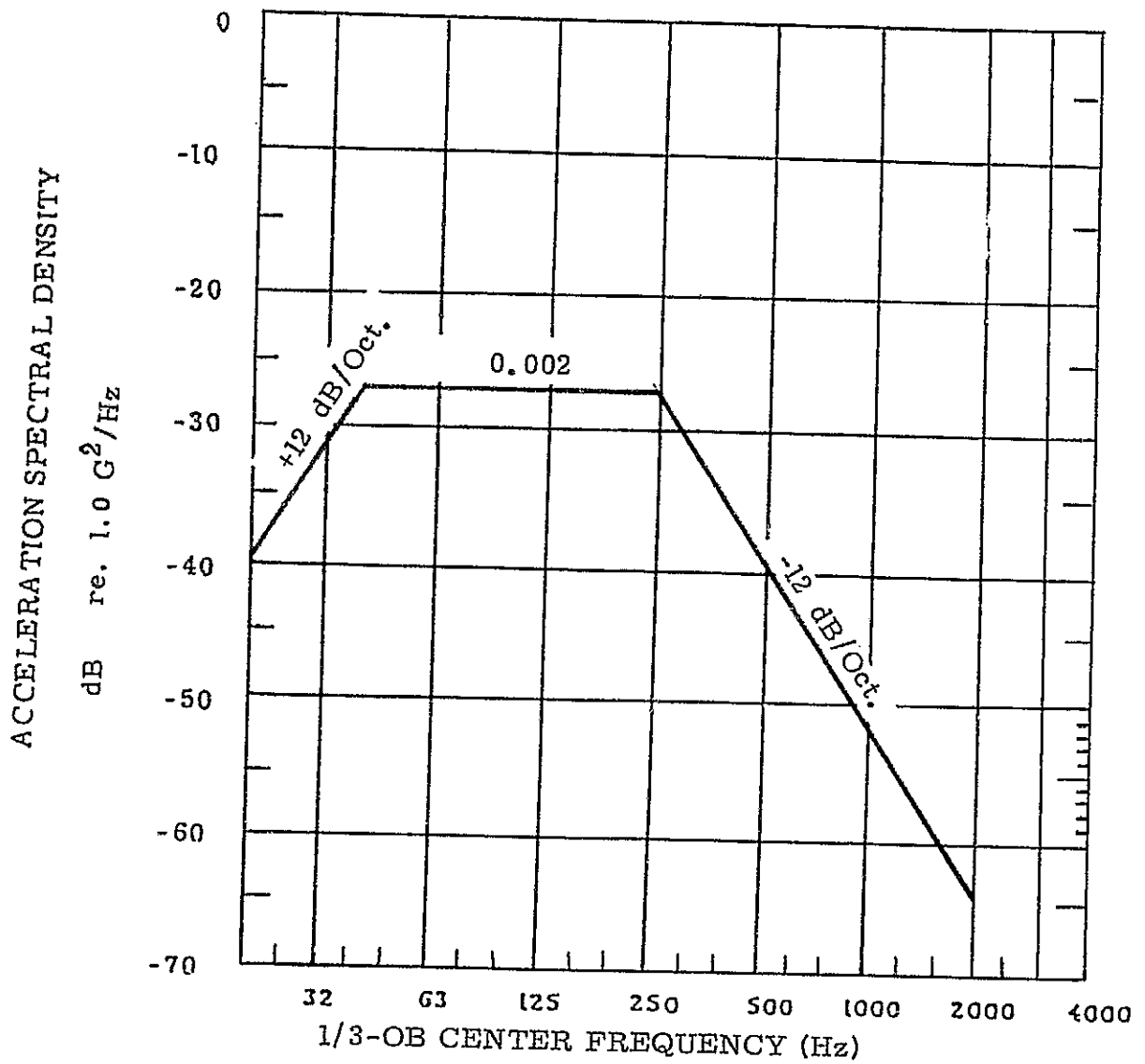


FIG. 8 - BASELINE RANDOM VIBRATION ENVIRONMENT CRITERIA

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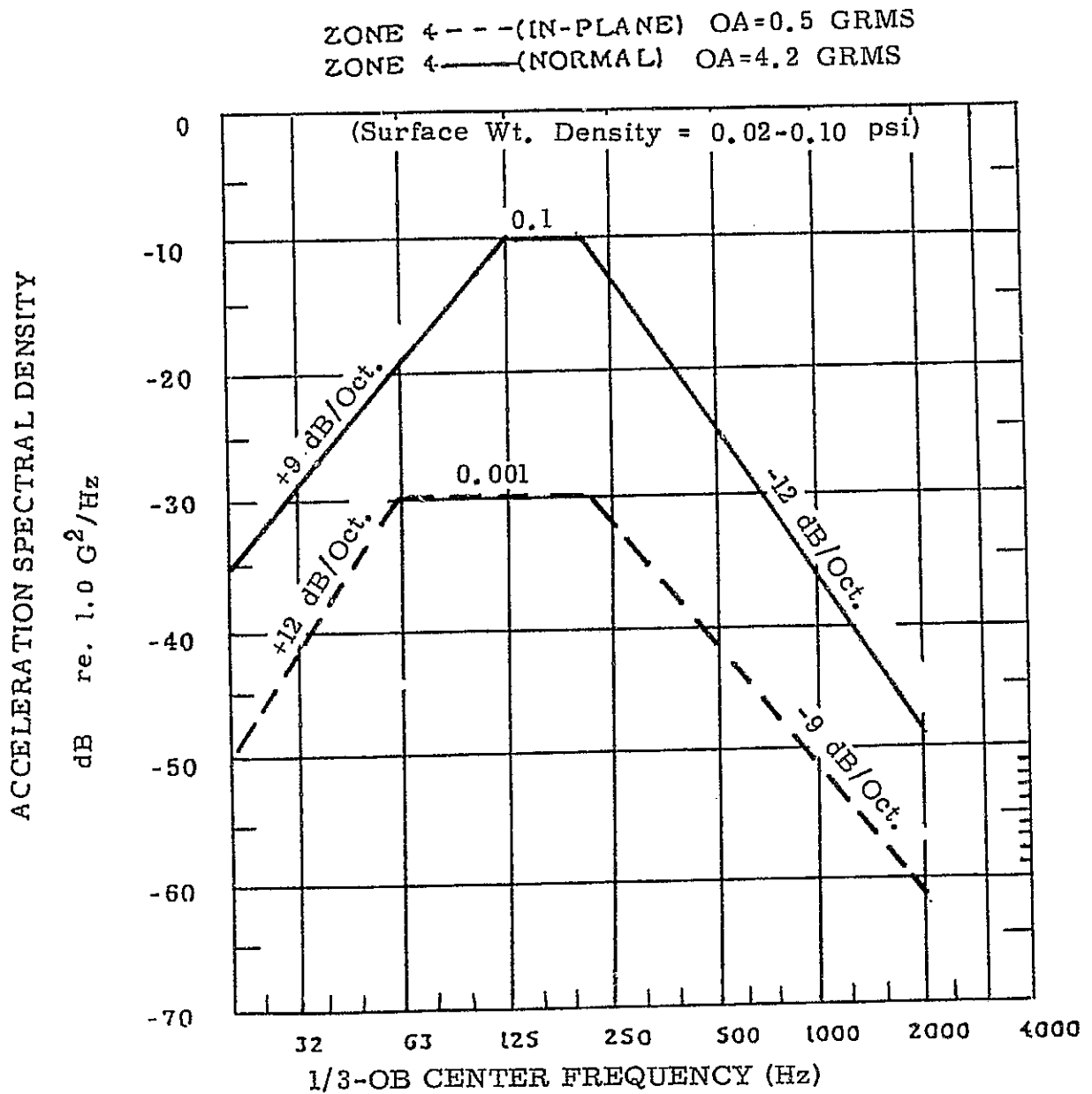


FIG.9 - BASELINE RANDOM VIBRATION ENVIRONMENT CRITERIA

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ZONE 1 (ALL AXES)

- NEAR P/L LONGERON TRUNNIONS
OA=3.1 GRMS (P/L<10K LB)
- - - NEAR P/L KEEL
OA=2.0 GRMS (P/L<10K LB)

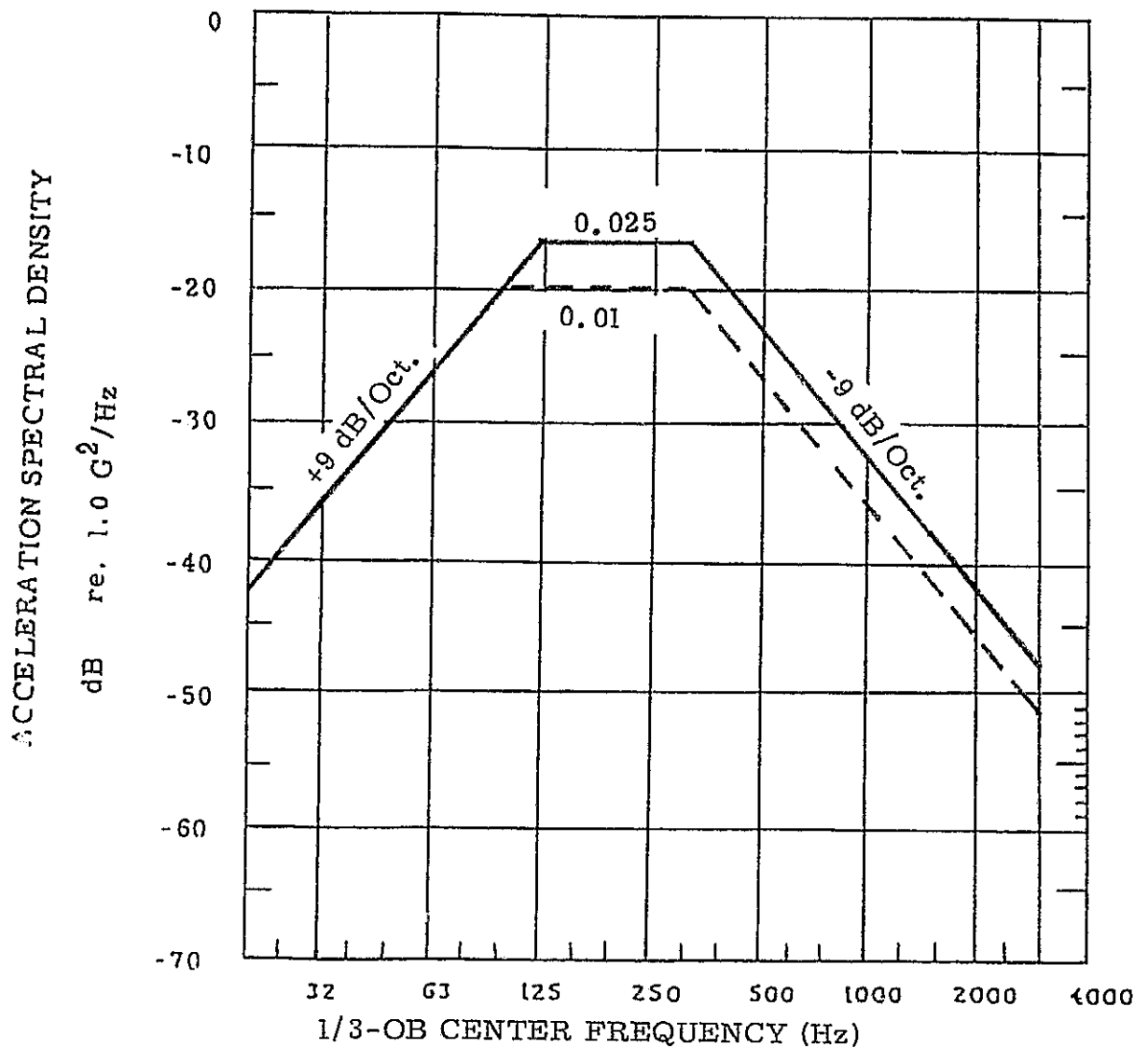


FIG. 10 - BASELINE RANDOM VIBRATION ENVIRONMENT CRITERIA

TABLE 1. ESTIMATED VARIANCES

1/3 OB Center Frequency (Hz)	Variance σ^2 in dB Ref*					
	Space Average Acoustic (1/3OBSPL)		Acceleration Spectral Density (1/3OBASDL)			Test Efficiency Factor Eq. 11
	Test	Flight	Test	Eq. 10 Norm Test	Flight	
31.5 - 63	2.25	1.0	0.25	3.50	0.25	3.75
63 - 200	0.50	3.0	0.25	3.75	0.25	4.00
200 - 2000	0.25	3.0	0.25	3.50	0.25	3.75

* 1/3OBSPL referenced to $20 \mu\text{N}/\text{m}^2$ 1/3OBASDL referenced to $(2.9 \times 10^{-9} \text{ grms})^2 / \text{Hz}$

TABLE 2
 BASELINE RANDOM VIBRATION ENVIRONMENT CRITERIA
 FOR SHUTTLE PALLET PAYLOAD SUBSYSTEMS
 FLIGHT LEVELS

ZONE	FREQUENCY HZ	ACCELERATION SPECTRAL DENSITY G ² /HZ
1 (All Axes) *	20 - 125 125 - 315 315 - 2000 OA grms	Near P/L Trunnion: +9 dB/oct 0.025 <10,000 lb P/L -9 dB/oct 3.1
1 (All Axes)	20 - 100 100 - 315 315 - 2000 OA grms	Near P/L Keel: +9 dB/oct 0.01 <10,000 lb P/L -9 dB/oct 2.0

* Shuttle Orbiter Axes

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TABLE 2 (Cond't)

BASELINE RANDOM VIBRATION ENVIRONMENT CRITERIA
FOR SHUTTLE PALLET PAYLOAD SUBSYSTEMS
FLIGHT LEVELS

ZONE	FREQUENCY HZ	ACCELERATION SPECTRAL DENSITY G ² /HZ
2 (All Axes)	20 - 40	+12 dB/oct
	40 - 800	0.002
	800 - 2000	-12 dB/oct
	OA grms	1.4
3 (All Axes)	20 - 40	+12 dB/oct
	40 - 250	0.002
	250 - 2000	-12 dB/oct
	OA grms	0.8
4* (Normal)	20 - 125	+9 dB/oct
	125 - 200	0.10
	200 - 2000	-12 dB/oct
	OA grms	4.2
4 (in-plane)	20 - 63	+12 dB/oct
	63 - 200	0.001
	200 - 2000	-9 dB/oct
	OA grms	0.5

* Surface Weight Density: 0.02 to 0.1 psi.

APPENDIX A

A.1 Accelerometer / Microphone Locations

A.2 Zone 2 STS-3 Flight Equivalent Test Data

A.3 Zone 3 STS-3 Flight Equivalent Test Data

A.4 Zone 4 STS-3 Flight Equivalent Test Data

A.1 Accelerometer / Microphone Locations

TABLE A.1.1

ACOUSTIC TEST ACCELEROMETERS

ACCEL NO.	ZONE NO	LOCATION DATE	AXIS GSFC	FACILITY	PSD NO	DESCRIPTION
1				1X	1	
2	2			1Y	2	HP #17 PALLET
3				1Z	3	
4				2X	4	
5	2			2Y	60	HP #1 PALLET
6				2Z	61	
7				3X	5	COLUMBIA CG
8				3Y	6	
9				3Z	7	
10				4X	62	IOWA CG
11				4Y	63	
12				4Z	64	
13				5X	8	IOWA BASE
14	2			5Y	9	
15				5Z	10	
16				6X	65	SUNY PEDESTAL BASE
17	3			6Y	66	
18				6Z	67	
19				7X	11	
20	2			7Y	12	HP #3 PALLET
21				7Z	13	
22	2	8X			14	VERTICAL SHELF
23				8Y	15	
24		8Z			16	
25				9X	17	
26	2			9Y	18	MSFC CPSS FMDM
27				9Z	19	
28	3	10X			20	SILL SHELF 3 (USU)
29		10Y			21	
30		10Z			22	
31				11X	23	SILL SHELF 3 (USU)
32	3			11Y	24	
33				11Z	25	

Table A.1.1 Continued

ACCEL NO.	ZONE NO	LOCATION DATE	AXIS GSFC	FACILITY	PSD NO	DESCRIPTION
34	3	12X			26	SILL SHELF 4 (USU)
35				12Y	27	
36		12Z			68	
37	3			13X	28	SILL SHELF 5 (USU)
38				13Y	29	
39				13Z	30	
40	3			14X	31	SILL SHLEF 6 (10kA)
41				14Y	32	
42				14Z	33	
43	2			15X	69	BOX BEAN @ HARD POINT
44				15Y	70	
45				15Z	71	
46	2			16X	34	HARD POINT 1
47				16Y	35	
48				16Z	36	
49	2			17X	37	HARD POINT 4
50				17Y	38	
51				17Z	39	
52	2			18X	40	HARD POINT 8
53				18Y	41	
54				18Z	42	
55	2			19X	72	HARD POINT 14
56				19Y	73	
57				19Z	74	
58	4	20X			43	PANEL 4 CENTER
59		20 _L			44	
60				20//	45	
61	4			21 _L	75	PANEL 4 QUARTER SPAN
62				22Y	86	PANEL 18
63				22 _L	87	
64	4			23X	88	FREON LINE (PANEL 19)
65				23Y	89	
66				23Z	90	

Table A.1.1 Continued

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ACCEL NO.	ZONE NO.	LOCATION DATE	AXIS GSFC	FACILITY	PSD NO	DESCRIPTION
67	4			24X	46	FREON LINE STANDOFF
68				24 _L	47	(PANEL 19)
69				24//	48	
70	4			25 _L	49	PALLET OUTER PANEL
71	4			26 _L	50	PALLET OUTER PANEL
72				27X	51	SUBSYSTEM MSFC
73	2			27Y	52	CPSS (PCB) SIDE
74				27Z	53	
75	2			28X	54	EXPERIMENT CPSS
76				28 _L	55	
77				28//	56	
78	3			29X	57	FWD FRAME/FREON PUMP
79				29Y	58	
80				29Z	59	
81				30X	91	RF ANTENNA TOP
82				30Y	92	
83	4			31 _L	93	PANEL 9
84	4			32X	94	PANEL 20
85				32 _L	162	
86	2			33X	96	FRAME BETWEEN PANEL
87*				33Y		17/18
88*				33Z		
89*				34X		FRAME BETWEEN PANEL
90*				34Y		23/24
91*				34Z		
92*				35X		LONGERON BETWEEN
93*				35Y		PANEL 17-13
94*				35Z		
95*				36X		LONGERON BETWEEN
96*				36Y		PANEL 23/19
97*				36Z		

* Instrumentation beyond facility recording capability
(not included in test)

Table A.1.1 Continued

ACCEL NO.	ZONE NO	LOCATION DATE	AXIS GSFC	FACILITY	PSD NO	DESCRIPTION
98 99 100	2			37X 37Y 37Z	97 98 99	HARD POINT 2
101 102 103	2			38X 38Y 38Z	100 101 161	HARD POINT 5
104 105 106	2			39X 39Y 39Z	103 104 105	HARD POINT 6
107 108 109	2			40X 40Y 40Z	106 107 108	HARD POINT 7
110 111 112	2			41X 41Y 41Z	109 110 111	HARD POINT 10
113 114 115				42X 42Y 42Z	112 113 114	AFT TRUNNION (+Y)
116 117 118				43X 43Y 43Z	115 116 117	AFT TRUNNION (-Y)
119 120 121				44X 44Y 44Z	118 119 120	FWD TRUNNION (+Y)
122 123 124	2			45X 45Y 45Z	121 122 126	HARD POINT 3
125 126 127	2			46X 46Y 46Z	124 125 126	HARD POINT 17
128 129 130	2			47X 47Y 47Z	127 128 129	HARD POINT 11 PALLET

Table A.1.1 Continued

ACCEL NO.	ZONE NO	LOCATION DATE	AXIS GSFC	FACILITY	PSD NO	DESCRIPTION
131	2			48X	130	HARD POINT 12
132				48Y	131	
133				48Z	132	
134 **				49X		HARD POINT 13
135 **				49Y		
136 **				49Z		
137	2	50X			133	THERMAL CANISTER BASE
138		50Z			134	
139	3	51X			135	THERMAL CANISTER INSIDE
140		51Y			136	
141		52X			137	THERMAL CANISTER TOP
142		52Y			138	
143		52Z			139	
144	3	53X			140	SUNY INSTRUMENT BASE
145		53Y			141	
146		53Z			142	
147	2	54X			143	VERTICAL SHELF
148	2	55X			144	VERTICAL SHELF
149		55Y			145	
150			56X			FWD TRUNNION (+Y)
151			56Z			
152			57X			FWD TRUNNION (-Y)
153						
154			58X			AFT TRUNNION (+Y)
155			59X			AFT TRUNNION (-Y)
156			60Y			STRUT, AFT (+Y)
157			61Y			STRUT, (AFT) (-Y)

** Not installed (inaccessable)

Table A.1.1 Continued

ACCEL NO.	ZONE NO	LOCATION DATE	AXIS GSFC	FACILITY	PSD NO	DESCRIPTION
158	2			62X	146	HARD POINT 2
159	3			62Y	147	PALLET SILL
160				62Z	148	
161	3			63X	149	SILL SHELF 5
162				63Y	150	AFT OUT BD
163				63Z	151	
164	3			64X	152	SILL SHELF 5
165				64Y	153	FWD OUT BD
166				64Z	154	
167	3			65X	155	SILL SHELF 5
168				65Y	156	AFT IN BD
169				65Z	157	
170	3			66X	158	SILL SHELF 5
171				66Y	159	FWD IN BD
172				66Z	160	

TABLE A.1.2

OSS-1 ACOUSTIC TEST MICROPHONES

MICROPHONE	LOCATION		CONTROL	DISCRIPTION
NO	DATE	FACILITY		
M1	*			INSIDE THERMAL CANISTER
M2	*			OUTSIDE THERMAL CANISTER X, -Y CORNER
M3	*			VERTICAL SHELF
M4	*			SILL SHELF 4
M5	*			SILL SHELF 6
M6		*	*	FORWARD
M7		*	*	AFT
M8		*	*	PORT
M9		*	*	STARBOARD
M10		*	*	TOP
M11		*	*	BOTTOM

A.2 Zone 2 STS-3 Flight Equivalent Test Data

TABLE A.2.1

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Thermal Canister Base

DIRECTION x

PSD NO. 133

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	134.22	145.82	126.11
40	134.50	145.10	122.93
50	130.15	151.45	126.86
63	152.59	161.49	134.68
80	147.54	152.84	123.65
100	146.35	149.75	118.33
125	140.37	150.27	116.62
160	153.27	150.77	114.65
200	157.54	154.54	116.18
250	157.74	153.34	112.76
320	155.83	150.63	107.58
400	154.15	148.85	103.56
500	155.98	150.48	102.96
630	158.37	152.87	103.84
800	159.25	158.45	106.23
1000	159.17	164.87	109.62
1250	157.77	162.27	105.59
1600	156.63	164.63	105.48
2000	159.92	172.92	111.54

TABLE A.2.2

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Thermal Canister Base

DIRECTION z

PSD NO. 134

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	141.00	152.60	132.08
40	141.30	151.00	129.64
50	141.65	153.85	129.36
63	148.25	157.15	130.34
80	146.87	151.37	122.18
100	147.85	158.45	119.83
125	151.90	152.80	119.16
160	158.59	156.80	119.07
200	162.81	159.81	121.46
250	159.22	154.82	114.23
320	159.90	154.70	111.65
400	161.30	156.80	110.71
500	162.54	157.84	109.52
630	163.49	157.90	108.16
800	160.80	159.20	107.87
1000	158.12	163.82	108.58
1250	155.87	168.37	103.69
1600	152.16	168.16	101.81
2000	152.80	165.80	104.42

TABLE A.2.3

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Vertical Shelf

DIRECTION x

PSD NO. 144

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	140.42	152.82	132.31
40	135.89	146.49	124.23
50	135.44	147.64	123.15
63	151.33	160.23	133.43
80	151.17	156.47	127.28
100	153.97	157.37	125.95
125	163.39	164.29	130.63
160	158.28	155.78	119.58
200	156.86	153.86	115.51
250	168.38	155.98	115.39
320	151.93	146.73	103.67
400	151.45	146.15	100.87
500	151.23	145.73	98.21
630	149.51	144.81	94.19
800	149.43	148.63	96.41
1000	149.63	154.53	100.08
1250	149.55	154.85	97.37
1600	158.28	158.28	99.05
2000	149.12	162.12	100.74

TABLE A.2.4

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Vertical Shelf

DIRECTION y

PSD NO. 145

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	141.88	153.48	133.77
40	142.26	152.86	130.60
50	139.91	152.11	127.62
63	145.83	154.73	127.93
80	148.58	153.88	124.68
100	152.54	155.94	124.52
125	161.99	162.89	129.14
160	178.18	167.68	131.48
200	169.57	166.57	128.22
250	168.88	163.68	123.89
320	165.68	168.48	117.34
400	178.88	165.58	120.22
500	178.68	165.18	117.58
630	168.28	162.78	112.88
800	168.47	167.67	115.45
1000	162.64	167.54	113.89
1250	162.52	167.82	118.34
1600	162.24	178.24	111.89
2000	163.83	176.83	114.65

TABLE A.2.5

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Box Beam at HP

DIRECTION x

PSD NO. 69

ZONE NO.2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	133.83	145.43	125.72
40	134.53	145.13	122.87
50	130.83	151.23	126.74
63	152.90	161.80	135.00
80	147.55	152.85	123.66
100	146.86	150.26	118.84
125	149.43	150.33	116.68
160	152.73	150.23	114.11
200	157.00	154.00	115.65
250	156.75	152.35	111.76
320	156.33	151.13	108.08
400	154.62	149.32	104.03
500	152.86	147.36	99.84
630	155.61	150.11	100.28
800	152.75	151.95	99.73
1000	151.62	156.52	102.07
1250	153.40	157.00	101.22
1600	145.15	153.15	94.01
2000	142.92	155.92	94.54

TABLE A.2.6

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Box Beam at HP

DIRECTION z

PSD NO. 71

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	133.36	144.96	125.25
40	140.22	150.82	128.56
50	140.31	152.51	128.02
63	144.71	153.61	126.81
80	147.94	153.24	124.05
100	149.04	152.44	121.01
125	147.85	148.75	115.10
160	150.90	148.49	112.37
200	157.59	154.59	116.24
250	160.68	156.28	115.60
320	160.26	155.06	112.00
400	160.54	155.24	109.95
500	160.01	154.51	106.99
630	160.24	154.74	104.91
800	154.08	153.28	101.07
1000	154.64	150.54	105.00
1250	153.87	150.37	101.60
1600	154.22	162.22	103.07
2000	151.42	164.42	103.04

TABLE A.2.7

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Subsystem MSFC CPSS (PCB) Side

DIRECTION x

PSD NO. 51

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	130.58	151.18	131.30
40	140.38	150.98	128.72
50	132.68	144.88	128.30
63	146.88	155.78	128.98
80	155.23	160.53	131.34
100	152.06	155.46	124.03
125	150.99	151.89	118.23
160	156.50	154.00	117.88
200	156.26	153.26	114.91
250	153.22	148.02	108.23
320	148.83	143.63	100.58
400	148.93	143.63	98.35
500	151.96	146.46	98.94
630	156.42	150.92	101.09
800	149.40	148.60	96.38
1000	149.33	154.23	99.78
1250	150.23	154.73	98.05
1600	146.94	154.94	95.79
2000	146.33	159.33	97.95

TABLE A.2.8

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Subsystem MSFC CPSS (PCB) Side

DIRECTION y

PSD NO. 52

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	130.11	150.71	131.00
40	138.70	149.39	127.13
50	137.34	149.54	125.05
63	147.13	156.83	129.23
80	146.55	151.85	122.66
100	147.90	151.30	119.87
125	154.54	155.44	121.79
160	154.42	151.02	115.80
200	157.80	154.80	116.44
250	156.90	152.59	112.00
320	149.16	143.96	109.90
400	149.19	143.80	98.60
500	149.45	143.95	96.43
630	150.38	144.88	95.05
800	148.39	147.59	95.38
1000	150.77	155.67	101.22
1250	151.29	155.79	99.11
1600	148.45	156.45	97.30
2000	150.89	163.89	102.51

TABLE A.2.9

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Subsystem MSFC CPSS (PCB) Side

DIRECTION z

PSD NO. 53

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	137.83	148.63	128.91
40	137.25	147.85	125.59
50	136.86	146.86	124.57
63	150.40	150.30	132.58
80	154.98	168.28	131.80
100	154.38	157.78	126.36
125	156.80	157.70	124.84
160	161.88	159.38	123.26
200	168.26	157.26	118.98
250	158.61	154.21	113.62
320	157.55	152.35	109.30
400	154.86	149.56	104.27
500	156.71	151.21	103.60
630	163.76	158.26	108.43
800	158.73	157.93	105.72
1000	168.62	165.52	111.88
1250	159.72	164.22	107.54
1600	156.35	164.35	105.28
2000	151.42	164.42	103.84

TABLE A.2.10

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Experiment CPSS

DIRECTION x

PSD NO. 54

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	141.29	152.89	133.18
40	136.38	146.98	124.72
50	136.42	148.62	124.13
63	151.77	168.67	133.87
80	152.28	157.58	128.39
100	154.47	157.87	126.45
125	153.99	154.89	121.23
160	155.79	153.29	117.17
200	153.98	150.98	112.63
250	156.51	155.11	114.53
320	153.45	148.25	105.28
400	149.51	143.21	97.92
500	148.45	142.95	95.43
630	151.83	145.53	95.78
800	148.93	148.13	95.02
1000	158.51	155.41	108.96
1250	149.88	154.38	97.78
1600	148.40	156.49	97.34
2000	144.75	157.75	96.37

TABLE A.2.11

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Experiment CPSS
DIRECTION \perp
PSD NO. 55
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	139.78	151.38	131.59
40	141.33	151.93	129.67
50	138.23	150.43	125.94
63	146.15	155.05	128.25
80	153.38	158.68	129.40
100	159.48	162.88	131.37
125	165.15	166.05	132.39
160	167.83	164.53	128.41
200	166.94	163.94	125.58
250	169.51	165.11	124.53
320	162.12	156.92	113.87
400	161.81	155.71	118.42
500	158.63	153.13	105.62
630	165.48	159.90	110.07
800	164.63	163.83	111.61
1000	159.79	164.69	118.24
1250	158.61	163.11	106.43
1600	157.66	165.66	106.51
2000	153.16	166.16	104.78

TABLE A.2.12

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Experiment CPSS
DIRECTION //

PSD NO. 56
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	135.57	147.17	127.46
40	137.58	148.18	125.92
50	140.41	152.81	128.12
63	146.42	155.32	128.52
80	150.40	155.70	126.51
100	156.77	160.17	128.75
125	156.67	157.57	123.92
160	159.17	156.67	120.55
200	151.30	148.30	109.05
250	158.57	154.17	113.58
320	168.14	154.04	111.80
400	155.12	149.82	104.54
500	153.19	147.69	100.17
630	159.38	153.88	104.05
800	158.91	158.11	105.80
1000	151.20	156.10	101.65
1250	158.97	155.47	98.70
1600	151.94	150.94	100.70
2000	153.32	166.32	104.94

TABLE A.2 13

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STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Vertical Shelf

DIRECTION x

PSD NO. 14

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	147.52	159.12	130.41
40	145.36	155.96	133.70
50	139.86	152.86	127.57
63	144.76	153.66	126.85
80	141.16	146.46	117.27
100	148.27	151.67	120.25
125	151.37	152.27	118.61
160	147.41	144.91	108.70
200	140.60	146.60	108.33
250	151.25	146.85	106.27
320	151.00	145.80	102.84
400	147.76	142.46	97.18
500	140.88	144.38	96.87
630	154.86	149.36	99.53
800	153.56	152.76	100.55
1000	149.52	154.42	99.08
1250	150.76	155.26	98.58
1600	147.74	155.74	96.50
2000	148.81	161.81	99.63

TABLE A 2.14

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Vertical Shelf

DIRECTION y

PSD NO. 15

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	143.81	155.41	135.70
40	141.88	152.48	130.22
50	138.88	150.28	125.70
63	150.42	150.32	132.52
80	145.11	150.41	121.22
100	143.30	146.70	115.28
125	145.78	146.68	113.02
160	146.34	143.84	107.72
200	146.00	143.00	105.63
250	148.58	144.18	103.50
320	145.73	148.53	97.48
400	146.00	141.60	96.31
500	146.41	148.91	93.30
630	149.91	144.41	94.58
800	148.67	147.87	95.65
1000	146.41	151.31	96.86
1250	147.70	152.20	95.52
1600	146.85	154.85	95.70
2000	147.43	160.43	99.05

TABLE A.2.15

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Vertical Shelf
DIRECTION z
PSD NO. 16
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	143.19	154.79	135.08
40	140.68	151.28	129.02
50	138.74	150.94	126.45
63	146.60	155.50	128.70
80	143.98	140.28	128.00
100	145.48	148.88	117.45
125	144.71	145.61	111.05
160	143.96	141.46	105.33
200	147.64	144.64	106.20
250	147.60	143.20	102.62
320	146.44	141.24	98.10
400	149.30	144.00	98.81
500	153.16	147.66	100.14
630	154.55	149.05	99.22
800	149.80	140.00	96.70
1000	148.25	153.15	98.78
1250	149.68	154.18	97.50
1600	149.83	157.83	97.88
2000	146.94	150.94	98.56

TABLE A.2.16

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION MSFC CPSS FMDM
DIRECTION x
PSD NO. 17
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	134.66	146.26	126.55
40	135.33	145.03	123.67
50	133.84	145.24	128.75
63	144.10	153.00	126.20
80	151.98	157.28	128.00
100	153.87	156.47	125.04
125	152.91	153.81	120.15
160	155.80	152.59	116.46
200	156.63	153.63	115.28
250	151.95	147.55	106.97
320	147.09	141.89	98.83
400	147.75	142.45	97.17
500	151.56	146.06	98.55
630	152.35	146.85	97.02
800	146.74	145.94	93.73
1000	148.75	153.65	99.20
1250	151.83	156.33	99.65
1600	149.83	157.83	98.68
2000	150.59	163.59	102.21

TABLE A.2.17

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION MSFC CPSS FMDM

DIRECTION y

PSD NO. 18

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	139.96	151.56	131.85
40	140.22	150.82	128.56
50	138.67	150.87	126.38
63	140.88	150.78	131.98
80	151.24	156.54	127.35
100	147.82	150.42	119.88
125	150.47	151.37	117.72
160	153.23	150.73	114.61
200	157.19	154.19	115.84
250	155.58	151.18	110.51
320	158.16	144.96	101.98
400	148.68	143.38	98.89
500	149.61	144.11	96.59
630	153.24	147.74	97.91
800	156.86	155.26	103.84
1000	156.68	161.58	107.13
1250	164.84	169.34	112.66
1600	164.23	172.23	113.88
2000	156.78	169.78	108.40

TABLE A.2.18

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION MSFC CPSS FMDM

DIRECTION z

PSD NO. 19

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	137.92	149.52	129.81
40	141.27	151.87	129.61
50	142.59	154.79	130.38
63	153.33	162.23	135.42
80	159.97	162.27	136.87
100	160.54	163.94	132.52
125	162.39	163.29	129.64
160	167.12	164.62	128.49
200	164.66	161.66	123.31
250	169.77	156.37	115.79
320	155.45	150.25	107.28
400	153.29	147.99	102.70
500	153.54	148.84	100.52
630	155.49	149.99	100.16
800	156.91	156.11	103.89
1000	158.23	163.13	108.68
1250	164.79	169.29	112.61
1600	161.41	169.41	110.26
2000	156.66	169.66	108.28

TABLE A.2.19

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Iowa Base
DIRECTION x
PSD NO. 8
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	148.84	151.64	131.93
40	137.89	148.49	126.23
50	136.75	148.95	124.46
63	143.71	152.61	125.81
80	142.14	147.44	118.25
100	141.81	144.41	112.99
125	145.74	146.64	112.98
160	144.87	142.37	106.25
200	145.93	142.93	104.57
250	145.62	141.22	100.64
320	148.93	143.73	100.68
400	153.31	148.81	102.72
500	157.83	151.53	104.81
630	161.28	155.78	105.87
800	155.14	154.34	102.12
1000	152.71	157.61	103.17
1250	152.36	156.86	100.18
1600	158.53	158.53	99.39
2000	148.05	161.85	99.67

TABLE A.2.20

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Iowa Base
DIRECTION y
PSD NO. 9
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	135.75	147.35	127.64
40	136.18	146.78	124.44
50	134.52	146.72	122.23
63	148.49	149.39	122.58
80	148.19	145.49	116.38
100	139.39	142.79	111.37
125	142.51	143.41	109.76
160	142.57	148.87	103.95
200	146.82	143.82	105.47
250	142.94	138.54	97.95
320	144.68	139.48	96.42
400	150.47	145.17	99.89
500	153.85	147.55	100.83
630	156.86	150.56	100.73
800	151.38	150.58	98.36
1000	152.85	156.95	102.58
1250	151.12	155.62	98.94
1600	158.68	158.68	99.53
2000	149.49	162.49	101.11

TABLE A.2.21

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Iowa Base
DIRECTION z
PSD NO. 10
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	134.96	146.56	126.85
40	140.80	151.40	129.14
50	141.18	153.38	128.89
63	145.13	154.83	127.22
80	143.82	149.12	119.93
100	143.25	146.65	115.22
125	145.35	146.25	112.60
160	147.87	145.37	109.24
200	152.85	149.85	111.50
250	155.87	150.67	110.08
320	156.68	151.40	108.35
400	159.79	154.40	109.20
500	161.93	156.43	108.92
630	166.82	160.52	110.69
800	159.16	159.36	106.14
1000	157.21	162.11	107.67
1250	155.94	160.44	103.76
1600	155.83	163.83	104.68
2000	153.75	166.75	105.37

TABLE A.2.22

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION HP#3 (OL)
DIRECTION x
PSD NO. 121
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	121.12	132.72	113.81
40	121.54	132.14	109.88
50	118.27	130.47	105.98
63	127.68	136.58	109.69
80	125.56	130.86	101.66
100	127.99	131.39	99.97
125	133.34	134.24	100.38
160	135.11	132.61	96.49
200	136.29	133.29	94.93
250	132.32	127.92	87.34
320	129.14	123.94	80.88
400	130.82	124.72	79.43
500	136.27	130.77	83.25
630	139.82	133.52	83.69
800	138.41	137.61	85.30
1000	136.84	141.74	87.29
1250	138.98	143.48	86.88
1600	139.72	147.70	88.55
2000	138.89	151.89	89.71

TABLE A.2.23

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#3 (OL)

DIRECTION y

PSD NO. 122

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	118.72	130.32	110.61
40	122.45	133.05	110.70
50	117.88	130.08	105.50
63	120.03	137.03	111.13
80	133.91	130.21	110.02
100	133.41	136.81	105.30
125	132.00	133.80	100.24
160	138.22	135.72	99.60
200	137.17	134.17	95.81
250	139.63	135.23	94.64
320	138.03	133.73	98.68
400	142.82	137.52	92.23
500	139.75	134.25	86.73
630	141.03	136.47	86.60
800	140.18	130.38	87.16
1000	139.20	144.10	80.65
1250	138.65	143.15	86.47
1600	138.84	146.84	87.60
2000	137.86	150.06	88.68

TABLE A.2.24

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#6 (OL)

DIRECTION x

PSD NO. 103

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	140.98	152.58	132.87
40	138.22	148.82	126.56
50	133.74	145.94	121.45
63	145.20	154.10	127.20
80	142.10	147.40	118.20
100	146.08	140.48	118.06
125	140.06	150.06	117.21
160	155.81	153.31	117.18
200	160.04	157.84	119.48
250	160.32	155.02	115.33
320	160.20	155.00	111.05
400	163.52	158.22	112.94
500	160.56	164.06	116.54
630	160.15	163.65	113.82
800	167.31	166.51	114.20
1000	164.17	160.07	114.62
1250	166.52	171.02	114.34
1600	165.78	173.78	114.63
2000	164.00	177.00	115.62

TABLE A.2.25

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#6 (OL)

DIRECTION y

PSD NO. 104

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	139.50	151.10	131.39
40	142.68	153.28	131.02
50	139.52	151.72	127.23
63	140.28	149.18	122.38
80	144.42	149.72	120.53
100	140.88	152.48	121.06
125	158.44	159.34	125.68
160	161.70	159.20	123.17
200	163.77	160.77	122.41
250	163.23	158.83	118.24
320	166.58	161.38	118.25
400	167.85	162.55	117.27
500	167.63	162.13	114.61
630	170.62	165.12	115.20
800	167.96	167.16	114.94
1000	165.60	170.50	116.06
1250	167.10	171.60	115.01
1600	168.06	176.06	117.81
2000	169.76	182.76	121.38

TABLE A.2.26

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#6 (OL)

DIRECTION z

PSD NO. 105

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	138.30	149.90	130.28
40	138.58	149.18	126.92
50	141.31	153.51	129.02
63	149.01	157.91	131.11
80	147.96	153.26	124.07
100	149.73	153.13	121.71
125	155.21	156.11	122.46
160	157.52	155.02	118.90
200	159.52	156.52	118.17
250	156.82	152.42	111.84
320	159.08	154.78	111.73
400	162.47	157.17	111.88
500	164.30	158.80	111.37
630	168.11	162.61	112.70
800	167.00	166.20	114.07
1000	165.83	170.73	116.28
1250	169.16	173.66	116.98
1600	169.82	177.82	118.67
2000	168.11	181.11	119.73

TABLE A.2.27

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#5 (OL)

DIRECTION x

PSD NO. 100

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	148.38	151.98	132.27
40	139.76	150.36	128.10
50	135.35	147.55	123.86
63	144.96	153.86	127.86
80	142.41	147.71	118.51
100	146.52	149.92	118.50
125	152.37	153.27	119.61
160	157.44	154.94	118.82
200	161.82	158.82	120.47
250	161.17	156.77	116.18
320	162.42	157.22	114.16
400	165.51	160.21	114.02
500	172.19	166.69	119.17
630	173.87	167.57	117.74
800	171.28	170.48	118.27
1000	167.15	172.05	117.60
1250	166.27	170.77	114.89
1600	164.84	172.84	112.89
2000	163.84	176.84	114.66

TABLE A.2.28

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#5 (OL)

DIRECTION y

PSD NO. 101

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	142.86	153.66	133.95
40	144.74	155.34	133.88
50	148.19	152.39	127.98
63	142.85	150.95	124.15
80	146.58	151.88	122.69
100	151.82	155.22	123.88
125	161.84	162.74	129.09
160	165.34	162.84	126.72
200	168.83	165.83	127.47
250	164.88	168.48	119.89
320	164.32	159.12	116.07
400	167.42	162.12	116.83
500	167.98	162.48	114.89
630	167.69	162.19	112.36
800	166.81	165.21	112.09
1000	164.95	169.85	115.41
1250	163.11	167.61	118.93
1600	162.74	170.74	111.59
2000	163.53	176.53	115.15

TABLE A.2.29

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#5 (OL)

DIRECTION z

PSD NO. 161

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	141.05	153.55	133.84
40	141.25	151.85	129.59
50	142.33	154.53	130.04
63	150.38	150.28	132.48
80	150.84	155.34	126.15
100	152.21	155.61	124.18
125	157.20	158.19	124.53
160	161.82	158.52	122.48
200	164.87	161.27	122.71
250	162.17	157.77	117.18
320	165.46	160.26	117.28
400	163.41	158.11	112.82
500	163.25	157.75	110.23
630	167.55	162.85	112.22
800	166.79	165.00	113.78
1000	165.79	170.69	116.25
1250	166.36	170.86	114.18
1600	164.11	172.11	112.96
2000	162.85	175.85	114.47

TABLE A.2.30

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#2 (OL)

DIRECTION x

PSD NO. 97

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	149.85	160.65	140.04
40	146.34	156.94	134.68
50	148.87	152.27	127.78
63	147.80	155.00	120.10
80	144.91	150.21	121.81
100	143.64	147.84	115.62
125	150.61	151.51	117.85
160	155.51	153.81	116.89
200	158.76	155.76	117.41
250	160.29	155.89	115.30
320	165.18	159.08	116.93
400	171.12	165.82	120.54
500	175.77	170.27	122.75
630	174.21	168.71	118.88
800	170.57	169.77	117.56
1000	165.25	170.15	115.71
1250	159.18	163.68	106.92
1600	155.55	163.55	104.40
2000	158.31	171.31	109.93

TABLE A.2.31

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#2 (OL)

DIRECTION y

PSD NO. 98

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	152.37	163.97	144.26
40	152.26	162.86	140.60
50	149.26	161.46	136.97
63	155.58	164.48	137.68
80	155.44	160.74	131.54
100	157.16	160.56	129.14
125	155.21	156.11	122.46
160	156.45	153.95	117.83
200	159.28	156.20	117.85
250	162.61	158.21	117.62
320	167.37	162.17	119.12
400	167.97	162.67	117.38
500	173.31	167.81	120.29
630	175.13	169.63	119.80
800	174.16	173.36	121.15
1000	172.95	177.85	123.41
1250	178.76	175.26	118.58
1600	169.71	177.71	118.56
2000	171.75	184.75	123.37

TABLE A.2.32

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#2 (OL)

DIRECTION z

PSD NO. 99

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	154.58	166.18	146.47
40	152.87	162.67	140.41
50	149.62	161.82	137.32
63	151.99	160.89	134.80
80	147.46	152.76	123.57
100	147.25	158.65	119.22
125	154.67	155.47	121.81
160	159.46	156.96	120.83
200	167.44	164.44	126.00
250	168.46	164.86	123.48
320	171.82	166.62	123.56
400	174.74	169.44	124.16
500	176.18	170.68	123.16
630	170.44	164.94	115.11
800	165.97	165.17	112.06
1000	160.32	165.22	110.77
1250	157.93	162.43	105.75
1600	152.44	167.44	108.20
2000	163.10	176.10	114.72

TABLE A.2.33

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#4 (OL)

DIRECTION x

PSD NO. 37

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	141.06	152.66	132.05
40	136.63	147.23	124.08
50	135.16	147.36	122.87
63	142.32	151.22	124.42
80	140.05	146.25	117.06
100	144.68	148.08	116.65
125	140.03	140.93	116.28
160	155.30	152.80	116.68
200	158.25	155.25	116.90
250	158.91	154.51	113.02
320	158.85	153.65	110.60
400	167.00	162.60	117.31
500	174.11	168.61	121.00
630	170.36	173.86	124.03
800	168.12	167.32	115.11
1000	160.86	173.06	119.51
1250	164.60	169.10	112.42
1600	157.94	165.94	106.70
2000	152.58	165.58	104.20

TABLE A.2.34

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#4 (OL)

DIRECTION y

PSD NO. 38

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	135.47	147.07	127.36
40	137.68	148.28	126.02
50	135.33	147.53	123.04
63	139.07	147.97	121.17
80	140.30	145.68	116.49
100	139.94	143.34	111.92
125	144.72	145.62	111.97
160	152.07	150.47	114.35
200	155.20	152.20	113.84
250	157.15	152.75	112.16
320	160.95	155.75	112.69
400	165.87	160.57	115.28
500	167.18	161.68	114.16
630	172.90	167.49	117.66
800	175.35	174.55	122.33
1000	166.55	171.45	117.00
1250	163.50	168.00	111.40
1600	162.41	170.41	111.27
2000	150.86	172.86	111.48

TABLE A.2.35

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#4 (OL)

DIRECTION z

PSD NO. 39

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	136.60	148.20	128.57
40	137.46	148.86	125.88
50	136.88	149.88	124.50
63	142.75	151.65	124.85
80	142.81	147.31	118.12
100	145.00	149.30	117.07
125	150.14	151.04	117.38
160	152.20	149.70	113.57
200	153.62	150.62	112.26
250	157.35	152.05	112.36
320	156.40	151.20	108.24
400	161.72	156.42	111.13
500	160.17	163.67	116.15
630	177.80	171.50	121.76
800	178.12	177.32	125.10
1000	171.21	176.11	121.66
1250	165.88	178.38	113.70
1600	168.50	168.50	109.45
2000	158.53	171.53	118.15

TABLE A.2.36

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#1 (OL)

DIRECTION x

PSD NO. 34

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	151.32	162.92	143.21
40	149.57	160.17	137.91
50	145.55	157.76	133.26
63	153.08	161.08	135.17
80	150.58	155.88	126.60
100	148.73	152.13	120.71
125	154.85	155.75	122.00
160	159.17	156.67	120.55
200	162.52	159.52	121.17
250	162.65	158.25	117.67
320	168.40	163.20	120.14
400	175.17	169.87	124.50
500	181.60	176.10	128.58
630	180.00	174.50	124.76
800	171.00	171.10	118.80
1000	166.91	171.81	117.36
1250	163.76	168.26	111.58
1600	162.30	170.30	111.24
2000	167.75	180.75	119.37

TABLE A.2.37

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#1 (OL)

DIRECTION y

PSD NO. 35

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	146.63	158.23	138.52
40	143.08	154.58	132.32
50	145.72	157.02	133.43
63	154.31	163.21	136.41
80	151.36	156.66	127.47
100	150.14	153.54	122.12
125	162.07	163.87	130.22
160	160.83	158.33	122.20
200	164.81	161.81	123.46
250	162.82	158.42	117.84
320	164.61	159.41	116.36
400	176.02	164.57	119.28
500	176.02	170.52	123.00
630	176.16	170.66	120.83
800	173.74	172.94	120.73
1000	172.71	177.61	123.16
1250	173.75	178.25	121.57
1600	173.34	181.34	122.19
2000	176.37	180.37	127.90

TABLE A.2.38

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#1 (OL)

DIRECTION z

PSD NO. 36

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	145.40	157.00	137.20
40	144.41	155.01	132.75
50	142.28	154.48	129.00
63	150.86	159.76	132.06
80	150.40	155.70	126.51
100	151.26	154.66	123.24
125	159.05	159.95	126.30
160	161.53	159.03	122.01
200	168.50	165.50	127.14
250	168.70	164.30	123.71
320	166.95	161.75	118.69
400	174.90	169.69	124.40
500	175.20	169.70	122.10
630	173.73	168.23	118.40
800	165.21	164.41	112.20
1000	159.73	164.63	110.10
1250	160.55	165.05	108.37
1600	161.24	169.24	110.00
2000	163.66	176.66	115.28

TABLE A.2.39

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Pallet HP#3 (OL)

DIRECTION x

PSD NO. 11

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	141.36	152.96	133.25
40	139.19	149.79	127.53
50	135.85	148.06	123.56
63	145.71	154.61	127.81
80	144.36	149.66	128.47
100	146.75	150.15	118.72
125	150.88	151.70	118.04
160	158.73	156.23	120.10
200	160.87	157.87	119.51
250	161.05	156.65	116.07
320	161.79	156.59	113.53
400	168.87	163.57	118.28
500	171.15	165.65	118.13
630	172.23	166.73	116.00
800	171.42	170.62	118.40
1000	172.54	177.44	122.00
1250	175.49	179.99	123.31
1600	175.25	183.25	124.10
2000	168.34	181.34	119.06

TABLE A.2.40

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Pallet HP#3 (OL)

DIRECTION y

PSD NO. 12

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	137.40	149.00	129.29
40	137.70	148.30	126.04
50	137.44	149.64	125.15
63	143.75	152.65	125.85
80	143.49	148.79	119.60
100	146.27	149.67	118.24
125	150.15	151.05	117.39
160	158.75	156.25	120.13
200	163.50	160.50	122.14
250	161.72	157.32	116.74
320	163.61	158.41	115.36
400	166.08	160.78	115.50
500	168.36	162.86	115.34
630	172.65	167.15	117.32
800	172.86	172.06	110.85
1000	175.05	179.05	125.50
1250	176.91	181.41	124.73
1600	178.50	178.50	119.35
2000	165.43	178.43	117.05

TABLE A.2.41

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Pallet HP#3 (OL)

DIRECTION z

PSD NO. 13

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	137.28	148.88	129.89
40	136.38	146.98	124.64
50	137.17	149.37	124.88
63	144.49	153.39	126.59
80	145.64	158.94	121.75
100	148.64	152.84	128.62
125	155.47	156.37	122.72
160	155.17	152.67	116.55
200	156.11	153.11	114.75
250	161.11	156.71	116.12
320	168.71	155.51	112.46
400	165.38	160.88	114.72
500	164.98	159.48	111.96
630	178.87	165.37	115.34
800	178.77	169.97	117.75
1000	176.43	181.33	126.88
1250	188.81	185.31	128.63
1600	174.94	182.94	123.79
2000	167.44	188.44	119.86

TABLE A.2.42

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Pallet HP#1 (OL)

DIRECTION x

PSD NO. 4

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	144.77	156.37	136.66
40	143.88	153.68	131.42
50	139.24	151.44	126.95
63	151.96	168.86	134.85
80	147.48	152.78	123.59
100	143.46	146.86	115.43
125	158.99	151.89	118.24
160	159.48	156.98	120.78
200	162.98	159.98	121.62
250	159.28	154.88	114.21
320	168.87	154.87	111.82
400	161.53	156.23	118.94
500	162.88	157.38	109.86
630	165.18	159.68	109.77
800	165.37	164.57	112.36
1000	169.43	174.33	119.88
1250	178.88	174.58	117.98
1600	166.64	174.64	115.58
2000	161.99	174.99	113.61

TABLE A.2.43

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Pallet HP#1 (OL)
DIRECTION y
PSD NO. 60
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	143.39	154.90	135.28
40	143.91	154.51	132.25
50	144.52	156.72	132.23
63	147.89	156.79	129.99
80	149.94	155.24	126.05
100	153.72	157.12	125.70
125	163.86	164.76	131.11
160	164.81	162.31	126.19
200	169.79	166.79	128.44
250	165.95	161.55	120.96
320	169.59	164.39	121.33
400	170.77	165.47	120.18
500	173.14	167.64	120.13
630	173.92	168.42	118.59
800	171.60	170.80	118.58
1000	168.22	173.12	118.68
1250	162.57	167.07	110.39
1600	161.91	169.91	110.76
2000	158.71	171.71	110.33

TABLE A.2.44

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Pallet HP#1 (OL)
DIRECTION z
PSD NO. 61
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	141.20	152.80	133.80
40	138.37	148.97	126.71
50	134.44	146.64	122.15
63	146.00	155.80	129.80
80	144.13	149.43	120.24
100	147.44	150.84	119.42
125	151.95	152.85	119.20
160	159.39	156.89	120.77
200	164.25	161.25	122.00
250	169.25	155.85	115.26
320	158.63	153.43	110.38
400	161.59	156.29	111.00
500	165.34	159.84	112.33
630	168.97	163.47	113.64
800	169.88	168.28	116.86
1000	167.48	172.38	117.94
1250	164.74	169.24	112.56
1600	162.49	170.49	111.34
2000	161.92	174.92	113.54

TABLE A.2.45

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#17 (IL)

DIRECTION x

PSD NO. 124

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	135.62	147.22	127.51
40	136.31	146.91	124.65
50	137.78	149.90	125.41
63	150.80	159.70	132.90
80	147.89	153.10	124.00
100	149.31	152.71	121.20
125	154.17	155.87	121.42
160	154.50	152.00	115.88
200	154.65	151.65	113.29
250	154.83	149.63	109.05
320	155.63	150.33	107.28
400	153.79	148.49	103.20
500	160.94	155.44	107.93
630	168.73	163.23	113.40
800	174.39	173.59	121.37
1000	176.38	181.20	126.75
1250	178.27	182.77	126.89
1600	161.95	169.95	118.80
2000	150.75	163.75	102.37

TABLE A.2.46

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#17 (IL)

DIRECTION y

PSD NO. 125

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	144.94	156.54	136.83
40	142.78	153.38	131.12
50	139.88	151.28	126.70
63	152.87	161.77	134.97
80	148.11	153.41	124.22
100	144.26	147.66	116.24
125	154.66	155.56	121.91
160	158.89	156.39	120.27
200	158.78	155.78	117.43
250	155.82	151.42	110.83
320	158.59	153.39	110.34
400	157.53	152.23	106.94
500	158.33	152.83	105.32
630	161.97	156.47	106.65
800	162.15	161.35	109.14
1000	159.73	164.63	110.19
1250	156.58	161.88	104.40
1600	158.50	166.50	107.35
2000	155.97	168.97	107.59

TABLE A.2.47

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#17 (IL)

DIRECTION z

PSD NO. 126

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	131.63	143.23	123.52
40	131.89	142.40	120.23
50	133.50	145.70	121.30
63	139.21	148.11	121.30
80	138.00	144.20	115.01
100	141.17	144.57	113.15
125	145.84	146.74	113.08
160	146.20	143.79	107.66
200	143.75	140.75	102.30
250	141.08	137.58	97.00
320	140.04	135.74	92.68
400	144.80	139.50	94.21
500	142.60	137.10	89.58
630	142.24	136.74	86.91
800	144.86	144.06	91.84
1000	141.03	146.83	92.38
1250	140.13	144.63	87.95
1600	135.24	143.24	84.00
2000	135.31	148.31	86.93

TABLE A.2.48

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Pallet HP#11 (IL)

DIRECTION x

PSD NO. 127

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	135.02	147.52	127.81
40	137.70	148.30	126.04
50	134.54	146.74	122.25
63	144.75	153.65	126.85
80	143.21	148.51	119.32
100	146.25	149.65	118.23
125	154.06	154.06	121.30
160	156.17	153.67	117.54
200	152.62	149.62	111.27
250	153.83	149.43	108.85
320	154.00	149.70	106.65
400	158.44	153.14	107.85
500	162.00	156.50	108.08
630	161.23	155.73	105.91
800	161.54	160.74	108.53
1000	153.88	158.78	104.33
1250	156.36	160.86	104.18
1600	154.63	162.63	103.48
2000	153.61	166.61	105.23

TABLE A.2.49

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Pallet HP#11 (IL)
DIRECTION y
PSD NO. 128
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	160.67	172.27	152.55
40	157.36	167.96	145.70
50	156.77	168.97	144.48
63	161.55	170.45	143.64
80	160.10	165.49	136.30
100	164.87	167.47	136.04
125	168.38	169.28	135.62
160	175.14	172.64	136.51
200	177.91	174.91	136.56
250	179.45	175.85	134.46
320	181.77	176.57	133.52
400	192.15	186.85	141.57
500	193.62	188.12	140.60
630	192.35	186.85	137.82
800	194.80	193.20	141.07
1000	189.57	194.47	140.82
1250	181.89	185.59	128.92
1600	173.56	181.56	122.42
2000	169.22	182.22	120.84

TABLE A.2.50

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Pallet HP#11 (IL)
DIRECTION z
PSD NO. 129
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	159.51	171.11	151.40
40	155.81	166.41	144.15
50	155.84	167.24	142.75
63	163.78	172.60	145.80
80	161.21	166.51	137.31
100	162.63	166.83	134.61
125	165.62	166.52	132.87
160	168.18	165.68	129.55
200	170.77	167.77	129.42
250	170.28	165.88	125.29
320	171.16	165.96	122.91
400	179.88	174.58	129.30
500	186.94	181.44	133.02
630	190.81	184.51	134.68
800	192.46	191.66	139.45
1000	188.64	193.54	139.80
1250	182.83	186.53	129.85
1600	177.17	185.17	126.83
2000	176.20	189.20	127.82

TABLE A.2.51

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#12 (IL)

DIRECTION x

PSD NO. 130

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	140.25	151.85	132.14
40	138.46	149.86	126.80
50	134.42	146.62	122.13
63	144.22	153.12	126.32
80	147.16	152.46	123.27
100	143.80	147.20	115.78
125	146.62	147.52	113.86
160	151.83	149.33	113.21
200	152.27	149.27	110.92
250	153.07	148.67	108.08
320	155.03	149.83	106.78
400	157.42	152.12	106.84
500	162.23	156.73	109.21
630	165.50	160.00	110.17
800	166.45	165.63	113.44
1000	173.77	170.67	124.22
1250	161.45	165.05	109.27
1600	158.94	166.94	107.70
2000	156.62	169.62	108.24

TABLE A.2.52

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#12 (IL)

DIRECTION y

PSD NO. 131

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	138.52	150.12	130.41
40	137.13	147.73	125.47
50	135.53	147.73	123.24
63	142.41	151.31	124.51
80	143.61	148.91	119.72
100	142.94	146.34	114.92
125	147.75	148.65	114.99
160	148.10	145.60	109.48
200	148.30	145.38	107.03
250	152.60	148.28	107.70
320	153.21	148.01	104.96
400	154.64	149.34	104.05
500	160.60	155.10	107.58
630	165.13	159.63	109.80
800	167.50	166.70	114.48
1000	174.43	170.33	124.88
1250	162.92	167.42	110.74
1600	158.89	166.89	107.74
2000	156.08	169.08	107.70

TABLE A.2.53

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#12 (IL)

DIRECTION z

PSD NO. 132

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	136.29	147.89	128.18
40	135.66	146.26	124.80
50	137.92	150.12	125.63
63	144.52	153.42	126.62
80	140.86	155.16	125.97
100	146.77	158.17	118.75
125	151.81	151.91	118.25
160	158.77	156.27	128.14
200	158.23	155.23	116.38
250	162.43	158.83	117.44
320	162.52	157.32	114.26
400	164.14	158.84	113.56
500	163.57	158.87	118.55
630	165.32	159.82	109.99
800	162.39	161.59	109.38
1000	164.58	169.40	114.95
1250	161.42	165.92	109.24
1600	164.99	172.99	113.84
2000	167.51	188.51	119.13

TABLE A.2.54

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#7 (IL)

DIRECTION x

PSD NO. 106

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	136.26	147.86	128.15
40	134.92	145.52	123.26
50	138.13	150.33	125.84
63	145.71	154.61	127.80
80	144.58	149.88	129.69
100	143.25	146.65	115.23
125	147.45	148.35	114.70
160	153.73	151.23	115.11
200	155.88	152.88	114.52
250	156.82	152.42	111.84
320	158.93	153.73	110.68
400	165.23	159.93	114.65
500	171.14	165.64	118.12
630	173.46	167.96	118.13
800	168.73	167.93	115.71
1000	164.86	169.76	115.31
1250	162.18	166.68	110.80
1600	156.98	164.98	105.83
2000	158.86	171.86	110.48

TABLE A.2.55

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION HP#7 (IL)
DIRECTION y
PSD NO. 107
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	139.69	151.29	131.58
40	140.52	151.12	128.86
50	141.94	154.14	129.65
63	145.81	154.71	127.90
80	149.77	155.07	125.88
100	152.23	155.63	124.21
125	159.18	160.00	126.35
160	162.82	160.32	124.19
200	166.13	163.13	124.77
250	165.38	160.98	120.30
320	162.71	157.51	114.45
400	167.56	162.26	116.97
500	173.66	168.16	120.65
630	174.84	169.34	119.51
800	175.32	174.52	122.30
1000	170.11	175.01	120.56
1250	166.92	171.42	114.74
1600	162.67	170.67	111.52
2000	158.15	171.15	109.77

TABLE A.2.56

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION HP#7 (IL)
DIRECTION z
PSD NO. 108
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	139.30	150.90	131.19
40	135.40	146.00	123.83
50	131.70	143.00	119.41
63	145.86	154.76	127.96
80	144.91	150.21	121.02
100	143.35	146.75	115.33
125	150.60	151.50	117.85
160	154.33	151.83	115.71
200	155.86	152.86	114.50
250	155.79	151.39	110.81
320	156.50	151.30	108.24
400	150.87	154.57	109.28
500	164.71	159.21	111.70
630	160.09	163.30	113.56
800	165.33	164.53	112.32
1000	162.63	167.53	113.00
1250	150.52	164.02	107.34
1600	158.58	166.58	107.43
2000	153.68	166.68	105.30

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TABLE A.2.57

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION HP#10 (IL)
DIRECTION x
PSD NO. 109
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	135.92	147.52	127.81
40	137.23	147.83	125.57
50	141.96	154.16	129.67
63	151.91	160.81	134.01
80	147.27	152.57	123.38
100	150.31	153.71	122.20
125	154.28	155.18	121.53
160	155.72	153.22	117.89
200	155.99	152.99	114.64
250	153.83	148.63	108.05
320	153.58	148.38	105.33
400	153.48	148.18	102.98
500	160.75	155.25	107.73
630	166.66	161.16	111.33
800	167.86	167.86	114.84
1000	166.72	171.62	117.18
1250	164.53	169.83	112.35
1600	165.55	173.55	114.40
2000	165.70	178.70	117.32

TABLE A.2.58

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION HP#10 (IL)
DIRECTION y
PSD NO. 110
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	138.81	150.41	130.69
40	139.42	150.82	127.76
50	142.40	154.60	130.11
63	144.80	153.70	126.99
80	145.26	150.56	121.36
100	147.10	150.50	119.17
125	153.64	154.54	120.89
160	157.83	155.33	119.20
200	158.65	155.65	117.30
250	159.18	154.78	114.19
320	160.34	155.14	112.08
400	159.11	153.81	108.52
500	162.97	157.47	109.95
630	169.82	163.52	113.69
800	161.26	160.46	108.24
1000	157.50	162.40	107.05
1250	154.41	158.91	102.23
1600	162.61	170.61	111.47
2000	165.70	178.70	117.32

TABLE A.2.59

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2 9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#10 (IL)

DIRECTION z

PSD NO. 111

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	143.22	154.82	135.11
40	142.18	152.78	130.52
50	137.97	150.17	125.68
63	148.37	157.27	130.47
80	148.85	154.15	124.96
100	148.40	151.80	120.47
125	152.14	153.04	119.38
160	156.47	153.97	117.84
200	161.92	158.92	120.57
250	165.21	160.81	120.22
320	163.55	158.35	115.29
400	161.36	156.06	110.78
500	162.66	157.16	109.64
630	166.14	160.64	110.81
800	163.91	163.11	110.90
1000	162.23	167.13	112.68
1250	159.10	163.60	106.92
1600	166.02	174.02	114.87
2000	168.49	181.49	120.11

TABLE A.2.60

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#14 (IL)

DIRECTION x

PSD NO. 72

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	133.50	145.10	125.39
40	134.74	145.34	123.08
50	137.71	149.01	125.41
63	150.70	159.80	132.80
80	145.73	151.03	121.84
100	145.85	149.25	117.83
125	148.06	148.96	115.31
160	152.34	149.84	113.72
200	157.32	154.32	115.97
250	158.00	153.60	113.01
320	157.71	152.51	109.46
400	160.15	154.85	109.57
500	169.63	164.13	116.62
630	174.07	168.57	118.75
800	166.89	166.09	113.88
1000	161.63	166.53	112.08
1250	156.43	160.93	104.25
1600	152.80	160.80	101.65
2000	154.20	167.20	105.82

TABLE A.2.61

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2 9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#14 (IL)

DIRECTION y

PSD NO. 73

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	138.18	149.78	138.87
40	138.25	148.85	126.59
50	141.66	153.86	129.37
63	142.98	151.88	125.88
80	142.20	147.58	118.31
100	145.15	148.55	117.13
125	152.87	152.97	119.31
160	155.87	152.57	116.44
200	156.20	153.20	114.85
250	155.53	151.13	118.55
320	156.65	151.45	108.48
400	155.26	149.96	104.67
500	158.81	153.31	105.79
630	164.51	159.81	109.18
800	164.84	163.24	111.02
1000	163.30	168.28	113.75
1250	156.62	161.12	104.44
1600	154.82	162.82	102.87
2000	152.83	165.83	104.45

TABLE A.2.62

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#14 (IL)

DIRECTION z

PSD NO. 74

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	139.96	151.56	131.84
40	141.16	151.76	129.58
50	143.84	155.24	138.75
63	148.48	157.38	138.58
80	145.78	151.88	121.81
100	147.12	158.52	119.88
125	153.97	154.87	121.22
160	160.27	157.77	121.65
200	165.81	162.81	123.65
250	168.88	156.58	115.92
320	163.36	158.16	115.10
400	164.28	158.98	113.69
500	163.33	157.83	110.31
630	166.69	161.19	111.36
800	162.88	162.88	109.86
1000	164.67	169.57	115.13
1250	164.64	169.14	112.46
1600	162.86	178.86	111.71
2000	168.88	173.88	111.78

TABLE A.2.63

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION HP#8 (IL)
DIRECTION x
PSD NO. 40
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	135.94	147.54	127.83
40	134.40	145.80	122.74
50	135.61	147.81	123.32
63	140.90	149.80	123.80
80	140.84	146.14	116.95
100	145.60	149.80	117.67
125	140.68	150.58	116.92
160	155.17	152.67	116.55
200	155.99	152.99	114.64
250	156.77	152.37	111.70
320	157.90	152.70	109.65
400	161.88	156.58	111.29
500	160.85	164.35	116.83
630	173.37	167.87	118.05
800	167.26	166.46	114.24
1000	163.88	168.78	114.33
1250	158.72	163.22	106.54
1600	155.46	163.36	104.32
2000	154.50	167.50	106.12

TABLE A.2.64

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION HP#6 (IL)
DIRECTION y
PSD NO. 41
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	134.11	145.71	126.00
40	136.46	147.06	124.80
50	141.18	153.38	128.80
63	146.10	155.00	128.20
80	146.15	151.45	122.26
100	148.73	152.13	120.71
125	154.30	155.20	121.54
160	161.77	159.27	123.15
200	160.87	157.87	119.52
250	159.39	154.90	114.41
320	162.47	157.27	114.22
400	162.98	157.68	112.39
500	171.17	165.67	118.16
630	175.04	169.54	119.72
800	172.27	171.47	119.26
1000	165.41	170.31	115.86
1250	160.23	164.73	108.05
1600	158.90	166.90	107.75
2000	159.63	172.63	111.25

TABLE A.2.65

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#8 (IL)

DIRECTION z

PSD NO. 42

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	134.41	146.81	126.38
40	135.22	145.82	123.56
50	140.28	152.48	127.88
63	140.98	149.88	122.99
80	143.58	148.88	119.69
100	146.61	150.81	118.59
125	150.54	151.44	117.78
160	154.89	151.59	115.47
200	154.84	151.84	112.68
250	159.23	154.83	114.24
320	159.88	154.68	111.55
400	161.58	156.28	118.99
500	168.73	163.23	115.71
630	169.21	163.71	113.88
800	168.27	167.47	115.25
1000	164.54	169.44	114.99
1250	165.18	169.68	112.92
1600	164.98	172.98	113.75
2000	163.94	176.94	115.56

TABLE A.2.66

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Pallet HP#17 (IL)

DIRECTION x

PSD NO. 1

ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	134.85	146.45	126.74
40	132.85	143.45	121.19
50	132.28	144.48	119.88
63	140.99	149.89	123.88
80	141.37	146.67	117.48
100	145.12	148.52	117.18
125	148.13	149.83	115.37
160	155.99	153.49	117.36
200	156.78	153.78	115.34
250	155.34	158.94	118.35
320	157.45	152.25	109.19
400	161.48	156.18	118.89
500	166.88	161.38	113.79
630	172.57	167.87	117.24
800	170.68	169.88	117.66
1000	171.14	176.84	121.68
1250	175.23	179.73	123.85
1600	168.81	176.81	116.86
2000	168.25	181.25	119.87

TABLE A.2.67

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Pallet HP#17 (IL)
DIRECTION y
PSD NO. 2
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASOL
31	136.45	148.06	128.34
40	136.51	147.11	124.85
50	138.86	151.06	126.57
63	141.47	150.37	123.56
80	141.50	146.80	117.61
100	146.02	149.42	118.00
125	153.45	154.35	120.69
160	155.46	152.96	116.83
200	157.00	154.00	115.65
250	155.67	151.27	110.68
320	156.47	151.27	108.21
400	159.02	153.72	108.43
500	162.47	156.97	109.46
630	171.28	165.78	115.95
800	171.11	170.31	118.09
1000	173.32	178.22	123.77
1250	177.38	181.88	125.20
1600	168.73	176.73	117.58
2000	167.96	188.96	119.58

TABLE A.2.68

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Pallet HP#17 (IL)
DIRECTION z
PSD NO. 3
ZONE NO. 2

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASOL
31	138.51	158.11	138.40
40	139.89	149.69	127.43
50	140.47	152.67	128.18
63	141.64	158.54	123.74
80	143.86	149.16	119.97
100	145.78	149.18	117.76
125	153.36	154.26	120.61
160	154.75	152.25	116.13
200	159.56	156.56	118.20
250	157.81	153.41	112.83
320	158.75	153.55	118.50
400	162.12	156.82	111.53
500	166.11	160.61	113.09
630	171.82	166.32	116.49
800	178.30	169.50	117.20
1000	172.17	177.87	122.62
1250	175.34	179.84	123.16
1600	165.95	173.95	114.80
2000	160.34	173.34	111.96

A.3 Zone 3 STS-3 Flight Equivalent Test Data

TABLE A.3.1

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Fwd. Frame / Freon Pump
DIRECTION x
PSD NO. 57
ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	138.95	146.55	126.83
40	133.89	140.19	117.94
50	132.85	141.25	116.76
63	150.94	156.84	130.84
80	146.79	150.89	120.00
100	144.40	145.80	114.37
125	150.27	149.17	115.52
160	155.44	151.84	115.81
200	159.66	156.16	117.81
250	156.62	151.22	110.63
320	154.75	147.85	103.99
400	161.88	151.28	106.00
500	164.18	152.68	105.88
630	165.50	151.50	101.76
800	164.38	152.58	100.28
1000	164.58	156.88	102.53
1250	161.63	152.13	95.45
1600	162.45	157.45	98.30
2000	162.15	161.15	99.77

TABLE A.3.2

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Fwd. Frame / Freon Pump
DIRECTION y
PSD NO. 58
ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	141.64	149.24	120.53
40	140.83	147.03	125.67
50	137.30	146.50	122.81
63	143.50	149.40	122.60
80	145.80	148.30	119.11
100	147.58	148.88	117.56
125	156.00	154.00	121.24
160	162.45	158.95	122.83
200	165.29	161.79	123.44
250	158.13	152.73	112.14
320	158.52	158.82	107.76
400	159.55	149.75	104.46
500	161.28	149.70	102.18
630	162.23	148.23	98.40
800	160.57	148.77	96.56
1000	158.24	150.64	96.19
1250	162.66	153.16	96.48
1600	164.34	159.34	100.13
2000	159.33	158.33	96.95

TABLE A.3.3

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Fwd. Frame / Freon Pump

DIRECTION z

PSD NO. 59

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	135.35	142.95	123.24
40	137.94	145.84	122.78
50	136.42	145.62	121.13
63	143.25	149.15	122.35
80	144.81	147.31	118.12
100	147.80	149.20	117.78
125	153.69	152.59	118.93
160	159.10	155.60	119.47
200	162.81	159.31	120.06
250	159.16	153.76	113.17
320	158.93	151.23	108.18
400	160.97	151.17	105.88
500	164.13	152.63	105.11
630	165.53	151.53	101.70
800	161.50	149.70	97.48
1000	162.40	154.89	100.44
1250	161.43	151.93	95.25
1600	158.69	153.69	94.54
2000	156.02	155.02	93.64

TABLE A.3.4

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION SUNY Pedestal Base

DIRECTION x

PSD NO. 65

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	140.89	147.69	127.98
40	139.48	146.58	124.32
50	141.92	151.12	126.63
63	145.12	151.02	124.21
80	139.82	142.32	113.13
100	138.44	139.84	108.42
125	144.89	142.99	109.34
160	142.58	139.88	102.06
200	143.94	140.44	102.09
250	145.81	140.41	99.83
320	147.85	140.15	97.10
400	149.37	139.57	94.28
500	152.71	141.21	93.69
630	156.45	142.45	92.62
800	150.68	138.88	86.66
1000	151.23	143.63	89.18
1250	152.58	143.08	86.40
1600	149.71	144.71	85.56
2000	144.83	143.83	82.45

TABLE A.3.5

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION SUNY Pedestal Base

DIRECTION y

PSD NO. 66

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	138.71	146.31	126.60
40	139.74	146.84	124.58
50	139.81	148.21	123.72
63	142.55	148.45	121.65
80	138.91	142.21	113.02
100	148.63	142.03	110.61
125	144.55	143.45	109.80
160	145.00	141.50	105.38
200	145.26	141.76	103.40
250	147.25	141.85	101.26
320	148.60	140.00	97.84
400	151.86	142.06	96.78
500	156.23	144.73	97.21
630	157.01	143.01	93.18
800	153.62	141.82	89.61
1000	148.44	140.84	86.39
1250	149.78	140.28	83.60
1600	148.04	143.04	83.89
2000	142.64	141.64	80.26

TABLE A.3.6

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION SUNY Pedestal Base

DIRECTION z

PSD NO. 67

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	141.56	149.16	129.45
40	140.82	147.92	125.66
50	135.85	145.05	120.56
63	148.36	154.26	127.46
80	147.68	150.08	121.79
100	147.88	149.28	117.86
125	149.52	148.42	114.77
160	150.68	147.18	111.06
200	148.14	144.64	106.28
250	151.89	146.49	105.90
320	151.26	143.56	100.50
400	147.71	137.91	92.63
500	152.85	141.35	93.83
630	159.09	145.09	95.27
800	157.13	145.33	93.11
1000	151.47	143.87	89.42
1250	151.59	142.09	85.41
1600	151.05	146.05	86.91
2000	147.63	146.63	85.25

TABLE A.3.7

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STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Thermal Canister Inside

DIRECTION x

PSD NO. 135

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	142.57	150.17	130.46
40	137.22	144.32	122.06
50	139.06	148.26	123.77
63	147.67	153.57	126.76
80	151.81	155.11	125.82
100	50.91	152.31	120.88
125	48.44	147.34	113.69
160	146.02	142.52	106.40
200	145.47	141.07	103.61
250	145.50	140.10	99.52
320	145.74	138.04	94.98
400	152.43	142.63	97.34
500	151.24	139.74	92.22
630	158.01	144.01	94.18
800	158.50	146.70	94.48
1000	158.72	151.12	96.67
1250	162.05	153.45	96.77
1600	162.06	157.96	98.81
2000	154.38	153.38	92.00

TABLE A.3.8

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Thermal Canister Inside

DIRECTION y

PSD NO. 136

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	148.15	155.75	136.04
40	148.73	155.83	133.57
50	149.34	158.54	134.05
63	154.14	160.04	133.24
80	162.13	165.43	136.24
100	172.45	173.85	142.43
125	171.20	170.10	136.44
160	178.60	175.18	130.06
200	178.65	175.15	136.80
250	172.47	167.07	126.48
320	176.70	169.00	125.04
400	175.27	165.47	120.19
500	173.63	162.13	114.62
630	174.42	160.42	110.59
800	173.48	161.68	100.47
1000	170.70	163.18	100.73
1250	164.13	157.53	97.95
1600	162.53	154.89	98.38
2000	155.00		92.71

TABLE A.3.9

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION SUNY Instrument Base

DIRECTION x

PSD NO. 140

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	148.34	155.04	136.23
40	147.10	154.29	132.03
50	145.40	154.60	130.11
63	148.81	154.71	127.91
80	156.26	159.56	130.37
100	159.18	160.58	129.16
125	156.68	155.58	121.93
160	155.08	151.58	115.46
200	156.58	153.88	114.73
250	157.32	151.92	111.33
320	159.34	151.64	108.59
400	158.83	149.03	103.74
500	158.45	146.95	99.43
630	160.92	146.92	97.09
800	158.47	146.67	94.45
1000	156.64	149.84	94.60
1250	156.98	147.48	90.80
1600	159.32	154.32	95.18
2000	159.70	158.70	97.32

TABLE A.3.10

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION SUNY Instrument Base

DIRECTION y

PSD NO. 141

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	130.73	138.33	118.62
40	135.72	142.82	120.56
50	143.25	152.45	127.96
63	146.82	152.72	125.92
80	147.36	150.66	121.47
100	146.74	148.14	116.71
125	147.06	145.96	112.31
160	142.49	138.99	102.87
200	139.49	135.99	97.64
250	146.21	140.81	100.23
320	150.12	142.42	99.36
400	152.04	142.24	96.95
500	150.38	147.88	100.36
630	162.50	148.50	98.67
800	152.93	141.13	88.91
1000	140.32	141.72	87.27
1250	147.24	137.74	81.06
1600	151.82	146.82	87.68
2000	149.80	148.80	87.42

TABLE A.3.11

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION SUNY Instrument Base

DIRECTION z

PSD NO. 142

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	145.47	153.87	133.35
40	143.43	150.53	128.27
50	141.32	150.52	126.02
63	145.19	151.09	124.29
80	143.67	146.97	117.77
100	141.54	142.94	111.52
125	144.61	143.51	109.86
160	148.48	144.98	108.86
200	148.09	144.59	106.23
250	150.42	145.02	104.43
320	151.15	143.45	100.40
400	155.04	145.24	99.96
500	155.71	144.21	96.70
630	163.17	149.17	99.34
800	161.36	149.56	97.34
1000	164.26	156.66	102.21
1250	166.52	157.82	100.34
1600	164.56	159.56	100.41
2000	152.17	151.17	89.79

TABLE A.3.12

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#2 Pallet Sill

DIRECTION x

PSD NO. 146

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	145.97	153.57	133.86
40	142.85	149.95	127.69
50	138.88	148.88	123.59
63	152.11	158.81	131.21
80	147.79	151.89	121.98
100	144.54	145.94	114.52
125	153.73	152.63	118.98
160	159.81	155.51	119.39
200	163.52	160.82	121.67
250	159.86	154.46	113.87
320	160.68	152.98	109.93
400	164.39	154.59	109.38
500	165.52	154.82	106.58
630	164.27	158.27	100.44
800	168.57	156.77	104.55
1000	170.94	163.34	108.89
1250	169.34	159.84	103.16
1600	166.50	161.50	102.35
2000	159.19	158.19	96.81

TABLE A.3.13

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#2 Pallet Sill

DIRECTION y

PSD NO. 147

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	147.37	154.97	135.26
40	150.77	157.87	135.61
50	148.39	157.59	133.10
63	154.45	160.35	133.54
80	151.33	154.63	125.44
100	154.14	155.54	124.12
125	163.94	162.84	120.19
160	164.96	161.46	125.34
200	170.46	166.96	128.60
250	167.79	162.39	121.80
320	171.10	163.40	120.35
400	172.20	162.40	117.11
500	173.48	161.98	114.46
630	173.48	159.48	109.65
800	170.47	158.67	106.46
1000	166.18	158.58	104.13
1250	161.84	152.34	95.66
1600	160.42	155.42	96.28
2000	159.43	158.43	97.05

TABLE A.3.14

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION HP#2 Pallet Sill

DIRECTION z

PSD NO. 148

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	143.76	151.36	131.65
40	144.37	151.47	129.21
50	140.80	150.80	125.51
63	140.83	154.93	128.13
80	148.17	151.47	122.28
100	151.52	152.92	121.50
125	157.84	155.94	122.28
160	161.88	158.38	122.26
200	166.24	162.74	124.39
250	160.33	154.93	114.34
320	161.01	153.31	110.25
400	161.95	152.15	106.86
500	166.92	155.42	107.90
630	170.15	156.15	106.32
800	160.54	157.74	105.52
1000	166.47	158.87	104.42
1250	163.20	153.70	97.02
1600	160.56	155.56	96.42
2000	150.56	158.56	97.18

TABLE A.3.15

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 6 (Iowa)

DIRECTION x

PSD NO. 31

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	158.58	158.18	138.47
40	146.15	153.25	130.90
50	145.00	155.18	130.61
63	141.38	147.28	128.48
80	146.80	150.18	128.91
100	147.72	149.12	117.70
125	156.00	155.80	122.15
160	161.27	157.77	121.64
200	160.30	156.80	118.44
250	152.23	146.83	106.25
320	155.76	148.06	105.00
400	155.22	145.42	100.14
500	155.85	144.35	96.83
630	159.78	145.78	95.05
800	160.08	148.28	96.86
1000	159.90	152.30	97.94
1250	159.82	150.32	93.64
1600	159.11	154.11	94.96
2000	151.39	150.30	89.81

TABLE A.3.16

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 6 (Iowa)

DIRECTION y

PSD NO. 32

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	149.87	157.47	137.76
40	148.91	156.81	133.75
50	146.41	155.61	131.12
63	154.70	160.60	133.80
80	154.95	158.25	129.05
100	152.24	153.64	122.22
125	155.82	154.72	121.06
160	160.84	156.54	120.42
200	158.21	154.71	116.35
250	158.86	145.46	104.88
320	149.41	141.71	98.66
400	156.40	146.60	101.31
500	159.28	147.78	100.27
630	166.38	152.38	102.55
800	159.42	147.62	95.40
1000	157.05	149.45	95.00
1250	156.42	146.02	90.24
1600	154.54	149.54	90.30
2000	150.87	149.87	87.60

TABLE A.3.17

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 6 (Iowa)

DIRECTION z

PSD NO. 33

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	148.37	155.97	136.26
40	145.87	152.97	130.71
50	146.66	155.86	131.37
63	154.80	160.70	133.89
80	155.90	159.20	130.00
100	155.27	156.67	125.25
125	162.41	161.31	127.66
160	166.27	162.77	126.65
200	162.37	158.87	120.51
250	158.75	153.35	112.76
320	162.42	154.72	111.66
400	160.10	150.30	105.02
500	161.52	150.02	102.50
630	165.71	151.71	101.89
800	162.01	150.21	97.90
1000	163.22	155.62	101.18
1250	163.15	153.65	96.97
1600	162.70	157.70	98.55
2000	159.33	150.33	96.95

TABLE A.3.18

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 5 (USU)

DIRECTION x

PSD NO. 28

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	156.30	163.90	144.19
40	153.02	160.12	137.86
50	145.75	154.95	130.46
63	150.93	156.83	130.03
80	152.14	155.44	126.24
100	154.92	156.32	124.90
125	155.36	154.26	120.60
160	155.15	151.65	115.53
200	151.85	149.35	110.00
250	156.64	151.24	110.65
320	158.88	151.10	108.13
400	162.59	152.70	107.51
500	161.09	149.59	102.07
630	158.38	144.38	94.55
800	160.66	157.86	105.65
1000	163.42	155.82	101.37
1250	162.40	152.90	96.22
1600	161.50	156.50	97.36
2000	161.42	160.42	99.04

TABLE A.3.19

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 5 (USU)

DIRECTION y

PSD NO. 29

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	142.47	150.07	130.36
40	142.86	149.16	126.00
50	143.71	152.91	128.42
63	154.53	160.43	133.63
80	154.69	157.09	128.80
100	158.44	159.84	128.42
125	157.24	156.14	122.49
160	161.63	158.13	122.01
200	162.15	158.65	120.29
250	163.11	157.71	117.12
320	164.83	157.13	114.07
400	164.49	154.69	109.40
500	181.51	170.01	122.49
630	177.10	163.10	113.27
800	167.42	155.62	103.40
1000	166.69	159.09	104.64
1250	170.67	161.17	104.49
1600	159.55	154.55	95.40
2000	167.45	166.45	105.07

TABLE A.3.20

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 5 (USU)

DIRECTION z

PSD NO. 30

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	155.25	162.85	143.14
40	153.38	160.48	138.22
50	146.36	155.56	131.07
63	151.80	157.70	130.00
80	151.72	155.02	125.83
100	158.45	151.85	120.42
125	150.90	149.80	116.15
160	162.58	159.08	122.95
200	162.46	159.06	120.60
250	162.77	157.37	116.79
320	166.25	158.55	115.49
400	168.25	158.45	113.17
500	173.83	162.33	114.81
630	174.44	160.44	110.61
800	175.13	163.33	111.11
1000	175.06	167.46	113.01
1250	168.26	158.76	102.00
1600	164.05	159.05	99.90
2000	160.63	159.63	98.25

TABLE A.3.21

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Sill Shelf 5 Aft Outbd.
DIRECTION x
PSD NO. 149
ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	153.38	160.98	141.26
40	148.88	155.18	132.92
50	138.85	148.85	123.56
63	149.52	155.42	128.61
80	158.34	153.64	124.45
100	151.67	153.87	121.65
125	155.30	154.20	120.55
160	157.18	153.68	117.56
200	153.00	149.50	111.14
250	153.43	148.83	107.45
320	161.88	154.18	111.12
400	166.41	156.61	111.32
500	167.30	155.80	108.29
630	165.63	151.63	101.81
800	161.53	149.73	97.51
1000	158.46	150.66	96.41
1250	154.10	144.60	87.82
1600	151.45	146.45	87.30
2000	157.55	156.55	95.17

TABLE A.3.22

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Sill Shelf 5 Aft. Outbd.
DIRECTION y
PSD NO. 150
ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	148.91	156.51	136.80
40	148.98	156.88	133.82
50	148.86	158.86	133.57
63	154.30	160.20	133.39
80	155.66	158.96	129.77
100	160.00	161.40	129.07
125	158.50	157.49	123.84
160	158.11	154.61	118.48
200	161.10	157.69	119.34
250	163.74	158.34	117.75
320	164.51	156.81	113.75
400	163.35	153.55	103.26
500	164.41	152.01	105.40
630	165.61	151.61	101.78
800	163.61	151.81	99.59
1000	163.65	156.85	101.60
1250	162.76	153.26	96.58
1600	159.18	154.18	95.83
2000	160.82	158.82	97.64

TABLE A.3.23

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 5 Aft. Outbd.

DIRECTION z

PSD NO. 151

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	153.56	161.16	141.45
40	158.39	157.49	135.23
50	158.63	159.83	135.34
63	153.83	159.73	132.93
80	153.23	156.53	127.34
100	148.84	158.24	118.82
125	158.19	149.89	115.44
160	156.87	152.57	116.45
200	165.67	162.17	123.81
250	167.91	162.51	121.92
320	169.93	162.23	110.17
400	168.65	158.85	113.56
500	167.79	156.29	108.78
630	168.84	154.84	104.21
800	166.14	154.34	102.13
1000	164.83	157.23	102.78
1250	162.35	152.85	96.17
1600	157.46	152.46	93.31
2000	160.34	159.34	97.96

TABLE A.3.24

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 5 Fwd. Outbd.

DIRECTION x

PSD NO. 152

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	153.75	161.35	141.64
40	149.46	156.56	134.38
50	148.85	149.25	124.75
63	152.83	158.73	131.93
80	152.62	155.92	126.73
100	153.92	155.32	123.98
125	158.47	157.37	123.72
160	159.31	155.81	119.69
200	153.26	149.76	111.41
250	155.31	149.91	109.32
320	163.65	155.95	112.90
400	167.73	157.93	112.65
500	165.98	154.48	106.97
630	160.45	146.45	96.62
800	162.83	150.23	98.81
1000	160.22	152.62	98.17
1250	155.83	146.33	89.65
1600	155.56	150.56	91.41
2000	159.58	158.58	97.20

TABLE A.3.25

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Sill Shelf 5 Fwd. Outbd.
DIRECTION y
PSD NO. 153
ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	149.35	156.95	137.24
40	147.40	154.50	132.24
50	137.86	147.86	122.57
63	151.34	157.24	130.44
80	148.67	151.97	122.78
100	153.21	154.61	123.18
125	153.41	152.31	118.66
160	154.30	150.80	114.67
200	162.24	158.74	120.38
250	160.60	155.29	114.70
320	166.56	158.86	115.81
400	168.31	158.51	113.22
500	170.87	159.37	111.86
630	171.57	157.57	107.74
800	170.52	158.72	106.50
1000	171.42	163.82	100.37
1250	166.98	157.48	100.80
1600	163.76	158.76	99.61
2000	159.42	158.42	97.04

TABLE A.3.26

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Sill Shelf 5 Fwd. Outbd.
DIRECTION z
PSD NO. 154
ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	146.52	154.12	134.41
40	145.91	153.81	130.75
50	145.01	155.11	130.62
63	156.03	161.93	135.13
80	153.85	157.15	127.95
100	154.66	156.06	124.64
125	156.06	154.96	121.30
160	161.52	158.02	121.89
200	160.88	157.38	119.02
250	159.21	153.81	113.22
320	165.92	158.22	115.17
400	161.94	152.14	106.85
500	162.82	151.32	103.80
630	161.26	147.26	97.44
800	166.18	154.38	102.16
1000	158.95	151.35	96.91
1250	159.23	149.73	93.05
1600	157.25	152.25	93.18
2000	157.71	156.71	95.33

TABLE A.3.27

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 5 Aft. Inbd.

DIRECTION x

PSD NO. 155

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	145.91	153.51	133.80
40	147.10	154.20	131.94
50	150.28	159.48	134.90
63	152.43	158.33	131.53
80	153.43	156.73	127.53
100	159.89	161.29	129.87
125	158.74	157.64	123.98
160	157.11	153.61	117.49
200	162.19	158.69	120.33
250	162.85	157.45	116.86
320	161.76	154.86	111.01
400	160.67	150.87	105.59
500	163.82	152.32	104.80
630	168.22	154.22	104.39
800	168.87	149.07	96.85
1000	164.29	156.69	102.24
1250	160.77	151.27	94.59
1600	154.15	149.15	90.80
2000	151.72	150.72	89.34

TABLE A.3.28

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 5 Aft. Inbd.

DIRECTION y

PSD NO. 156

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	159.49	167.89	147.38
40	156.58	163.68	141.34
50	158.97	160.17	135.68
63	147.79	153.69	126.89
80	148.43	151.73	122.54
100	151.77	153.17	121.75
125	151.94	150.84	117.19
160	152.73	149.23	113.10
200	163.72	160.22	121.87
250	165.04	159.64	119.06
320	165.26	157.56	114.50
400	165.39	155.59	110.31
500	165.82	153.52	106.00
630	164.21	150.21	100.39
800	160.77	157.97	105.75
1000	167.42	159.82	105.38
1250	165.44	155.94	99.26
1600	162.88	157.88	98.65
2000	162.87	161.87	99.69

TABLE A.3.29

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 5 Aft. Inbd.

DIRECTION z

PSD NO. 157

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	145.59	153.19	133.48
40	143.48	150.58	128.32
50	142.14	151.34	126.85
63	140.39	155.29	128.49
80	148.38	151.68	122.49
100	151.40	152.80	121.38
125	150.59	159.49	125.84
160	164.68	161.18	125.06
200	167.74	164.24	125.88
250	165.25	159.85	119.26
320	171.43	163.73	120.67
400	172.43	162.63	117.35
500	175.68	164.18	116.67
630	174.28	160.28	110.45
800	169.84	157.24	105.02
1000	166.27	158.67	104.22
1250	162.36	152.86	96.18
1600	158.74	153.74	94.59
2000	155.86	154.86	93.48

TABLE A.3.30

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 5 Fwd. Inbd.

DIRECTION x

PSD NO. 158

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	158.00	166.50	146.79
40	156.63	163.73	141.47
50	151.15	160.35	135.86
63	146.84	152.74	125.94
80	147.01	150.31	121.12
100	151.38	152.78	121.36
125	152.06	151.86	118.21
160	152.29	148.79	112.67
200	156.40	154.90	116.55
250	159.06	154.56	113.98
320	165.87	158.17	115.12
400	162.61	152.81	107.52
500	162.46	150.96	103.44
630	163.48	149.48	99.65
800	160.28	157.48	105.26
1000	166.86	159.26	104.81
1250	164.53	155.03	98.35
1600	161.14	156.14	96.09
2000	157.77	156.77	95.39

TABLE A.3.31

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Sill Shelf 5 Fwd. Inbd.
DIRECTION y
PSD NO. 159
ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	151.01	158.61	138.00
40	150.00	157.10	134.84
50	147.73	156.03	132.44
63	157.38	163.28	136.48
80	155.75	159.05	129.86
100	156.43	157.83	126.41
125	153.94	157.84	124.19
160	162.89	159.39	123.27
200	162.35	158.85	120.49
250	159.56	154.16	113.58
320	163.54	155.84	112.78
400	161.16	151.36	106.07
500	165.08	153.58	106.06
630	166.25	152.25	102.43
800	163.20	151.40	99.18
1000	158.30	150.70	96.25
1250	160.46	150.06	94.28
1600	153.88	148.88	89.73
2000	153.68	152.68	91.30

TABLE A.3.32

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Sill Shelf 5 Fwd. Inbd.
DIRECTION z
PSD NO. 160
ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	143.05	151.55	131.84
40	143.35	150.45	128.10
50	140.50	149.79	125.30
63	150.28	156.18	129.38
80	147.68	150.98	121.70
100	148.02	149.42	117.99
125	157.02	155.92	122.27
160	160.33	156.83	120.70
200	163.16	159.66	121.31
250	163.11	157.71	117.12
320	168.36	160.66	117.61
400	172.81	163.81	117.72
500	173.39	161.89	114.37
630	173.03	159.03	109.20
800	166.48	154.68	102.46
1000	162.70	155.10	100.65
1250	161.00	151.50	94.82
1600	160.67	155.67	96.52
2000	156.40	155.49	94.11

TABLE A.3.33

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Sill Shelf 4 (USU)
DIRECTION x
PSD NO. 26
ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	158.87	166.47	146.76
40	155.54	162.64	140.30
50	148.00	157.28	132.79
63	155.48	161.38	134.57
80	157.55	160.85	131.66
100	156.12	157.52	126.10
125	157.35	156.25	122.60
160	150.07	155.57	119.44
200	167.37	163.87	125.52
250	160.00	155.40	114.82
320	156.01	140.21	106.16
400	159.65	140.85	104.57
500	164.25	152.75	105.23
630	174.94	160.04	111.12
800	167.45	155.65	103.43
1000	172.51	164.91	110.46
1250	165.08	156.48	99.80
1600	165.99	160.99	101.84
2000	154.47	153.47	92.00

TABLE A.3.34

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION
LOCATION Sill Shelf 4 (USU)
DIRECTION y
PSD NO. 27
ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	160.83	160.43	148.72
40	157.60	164.70	142.44
50	145.72	154.92	130.43
63	155.26	161.16	134.36
80	150.36	161.66	132.47
100	154.44	155.84	124.42
125	161.83	160.73	127.00
160	170.93	167.43	131.31
200	176.88	173.38	135.03
250	166.59	161.19	120.61
320	160.08	152.38	109.33
400	162.53	152.73	107.45
500	170.85	150.35	111.84
630	167.07	153.87	104.05
800	171.50	150.70	107.40
1000	172.47	164.87	110.42
1250	165.83	156.33	99.65
1600	166.84	161.04	101.80
2000	157.52	156.52	95.14

TABLE A.3.35

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 4 (USU)

DIRECTION z

PSD NO. 68

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	152.57	168.17	140.46
40	149.08	156.18	133.92
50	138.61	147.81	123.32
63	140.24	155.14	128.34
80	147.32	158.62	121.43
100	152.29	153.69	122.27
125	165.62	164.52	130.86
160	165.85	162.35	126.23
200	165.51	162.01	123.66
250	164.28	158.88	118.30
320	165.71	158.01	114.95
400	167.44	157.64	112.36
500	172.54	161.04	113.52
630	175.58	161.58	111.75
800	171.04	159.24	107.03
1000	161.66	154.06	99.61
1250	168.63	159.13	102.45
1600	171.33	166.33	107.18
2000	161.47	160.47	99.09

TABLE A.3.36

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 3 (USU)

DIRECTION x

PSD NO. 23

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	148.00	155.60	135.89
40	143.65	150.75	128.49
50	146.42	155.62	131.13
63	145.06	150.96	124.15
80	147.06	150.36	121.16
100	147.86	149.26	117.84
125	150.28	149.18	115.52
160	152.05	148.55	112.43
200	150.96	147.43	109.10
250	151.28	145.88	105.29
320	150.69	142.99	99.93
400	153.05	143.25	97.96
500	156.28	144.78	97.26
630	158.63	144.63	94.80
800	155.53	143.73	91.51
1000	150.98	143.38	88.85
1250	151.72	142.29	85.61
1600	148.93	143.93	84.78
2000	146.47	145.47	84.09

TABLE A.3.37

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 3 (USU)

DIRECTION y

PSD NO. 24

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	157.52	165.12	145.41
40	154.55	161.65	139.39
50	152.34	161.54	137.05
63	151.92	157.82	131.01
80	150.80	154.10	124.91
100	144.35	145.75	114.33
125	148.00	147.89	114.23
160	152.17	148.67	112.55
200	156.21	152.71	114.36
250	157.23	151.83	111.24
320	162.47	154.77	111.72
400	159.05	149.25	103.96
500	159.62	148.12	100.60
630	163.06	149.06	99.24
800	159.96	148.16	95.94
1000	157.74	150.14	95.69
1250	154.71	145.21	88.53
1600	152.74	147.74	88.59
2000	144.04	143.04	81.66

TABLE A.3.38

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 3 (USU)

DIRECTION z

PSD NO. 25

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	151.33	158.03	139.22
40	149.65	156.75	134.49
50	143.66	152.86	128.37
63	152.45	158.35	131.54
80	154.52	157.82	128.62
100	152.04	153.44	122.01
125	148.05	147.85	114.20
160	150.14	146.64	110.52
200	151.70	148.20	109.85
250	152.45	147.05	106.46
320	157.50	149.89	106.84
400	154.22	144.42	99.13
500	156.19	144.69	97.17
630	157.12	143.12	93.29
800	153.07	141.27	89.05
1000	151.31	143.71	89.26
1250	151.05	141.55	84.88
1600	145.97	140.97	81.82
2000	146.77	145.77	84.30

TABLE A.3.39

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 3 (USU)

DIRECTION x

PSD NO. 20

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	144.62	152.22	132.51
40	140.52	147.62	125.36
50	136.38	145.58	121.09
63	143.45	149.35	122.55
80	148.51	151.81	122.62
100	148.93	150.33	118.91
125	149.85	148.75	115.09
160	152.22	148.72	112.60
200	151.06	147.56	109.20
250	148.78	143.38	102.79
320	147.09	139.39	96.33
400	148.98	139.18	93.90
500	153.80	142.30	94.78
630	154.22	140.22	90.39
800	150.47	138.67	86.45
1000	148.70	141.10	86.65
1250	149.69	140.19	83.51
1600	148.46	143.46	84.31
2000	147.31	146.31	84.93

TABLE A.3.40

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 3 (USU)

DIRECTION y

PSD NO. 21

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	143.70	151.39	131.68
40	151.79	158.89	136.63
50	142.24	158.44	133.95
63	152.80	158.70	131.90
80	152.32	155.62	126.43
100	148.18	149.58	118.16
125	158.31	157.21	123.55
160	163.40	159.00	123.78
200	164.07	160.57	122.22
250	164.89	159.49	118.91
320	163.53	155.83	112.77
400	163.06	153.26	107.98
500	166.45	154.95	107.43
630	163.55	149.55	99.72
800	161.87	150.07	97.85
1000	157.46	149.86	95.41
1250	159.41	149.91	93.23
1600	155.63	150.63	91.49
2000	149.83	148.83	87.45

TABLE A.3.41

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Sill Shelf 3 (USU)

DIRECTION z

PSD NO. 22

ZONE NO. 3

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	139.64	147.24	127.53
40	140.73	147.83	125.57
50	139.20	148.40	123.00
63	147.99	153.89	127.09
80	149.77	153.07	123.88
100	145.77	147.17	115.75
125	145.58	144.48	110.83
160	146.89	143.39	107.27
200	148.95	145.45	107.09
250	152.79	147.39	106.81
320	151.98	144.28	101.22
400	148.17	138.37	93.00
500	150.47	138.97	91.45
630	151.12	137.12	87.20
800	149.62	137.82	85.60
1000	148.95	141.35	86.90
1250	149.44	139.94	83.26
1600	151.00	146.00	86.85
2000	148.03	147.03	85.65

A.4 Zone 4 STS-3 Flight Equivalent Test Data

TABLE A.4.1

ORIGINAL PAGE IS
OF POOR QUALITYSTS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTIONLOCATION Panel 4 Center
DIRECTION x
PSD NO. 43
ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	144.88	148.68	128.97
40	141.98	147.88	124.74
50	139.17	147.37	122.88
63	138.87	155.97	129.16
80	145.92	149.72	128.53
100	146.51	148.41	116.09
125	158.64	157.54	123.89
160	161.23	157.73	121.61
200	163.79	159.29	120.94
250	163.87	157.27	116.69
320	164.83	155.83	112.78
400	173.88	162.58	117.30
500	178.87	165.37	117.85
630	179.69	163.38	113.47
800	178.56	164.76	112.54
1000	176.75	164.85	109.60
1250	176.20	168.70	112.82
1600	178.42	168.42	109.27
2000	165.98	168.98	107.52

TABLE A.4.2

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTIONLOCATION Panel 4 Center
DIRECTION //
PSD NO. 45
ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	139.81	143.61	123.89
40	148.67	145.77	123.51
50	144.87	152.27	127.78
63	151.17	157.87	130.27
80	158.83	153.83	124.64
100	158.40	152.38	128.88
125	158.67	157.57	123.92
160	159.86	156.36	120.24
200	162.88	157.58	119.23
250	167.93	161.33	128.74
320	165.27	156.27	113.21
400	170.16	158.86	113.58
500	171.36	157.86	118.34
630	177.84	168.74	118.91
800	177.39	163.59	111.37
1000	177.81	165.11	110.66
1250	169.23	161.73	105.05
1600	164.25	162.25	103.10
2000	165.48	168.48	107.02

TABLE A.4.3

STS-3 FLIGHT EQUIVALENT TEST DATA
 1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
 ACCELEROMETER DESCRIPTION
 LOCATION Freon Line Standoff (Panel 19)
 DIRECTION x
 PSD NO. 46
 ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	138.74	143.34	123.63
40	139.89	144.10	121.93
50	137.61	145.81	121.31
63	145.28	151.18	124.37
80	145.64	149.44	128.25
100	149.74	151.64	128.21
125	161.50	160.40	126.75
160	168.82	164.52	128.40
200	167.43	162.93	124.57
250	161.88	155.28	114.69
320	164.72	155.72	112.67
400	164.94	153.64	108.35
500	173.74	168.24	112.72
630	182.17	165.87	116.84
800	176.92	163.12	118.98
1000	172.11	159.41	104.96
1250	168.43	160.93	104.25
1600	161.25	159.25	100.10
2000	159.62	162.62	101.24

TABLE A.4.4

STS-3 FLIGHT EQUIVALENT TEST DATA
 1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
 ACCELEROMETER DESCRIPTION
 LOCATION Freon Line Standoff (Panel 19)
 DIRECTION //
 PSD NO. 48
 ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	138.87	142.67	122.96
40	139.89	144.99	122.73
50	138.55	146.75	122.26
63	143.69	149.59	122.70
80	143.87	147.67	118.48
100	147.20	149.10	117.67
125	155.93	154.83	121.17
160	163.50	160.00	123.88
200	161.89	156.59	118.23
250	161.14	154.54	113.95
320	163.40	154.40	111.35
400	168.73	157.43	112.14
500	173.75	168.25	112.73
630	183.45	167.15	117.32
800	178.99	165.19	112.97
1000	170.39	157.60	103.24
1250	163.25	155.75	99.87
1600	158.38	156.38	97.24
2000	156.84	159.84	97.66

TABLE A 4 5

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION

LOCATION Freon Line (panel 19)
DIRECTION x
PSD NO. 88
ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	148.54	145.14	125.43
40	139.42	144.52	122.26
50	138.41	146.61	122.12
63	146.05	151.95	125.15
80	152.71	156.51	127.32
100	152.21	154.11	122.68
125	162.85	161.75	128.89
160	169.76	166.26	130.13
200	161.45	156.95	118.60
250	164.75	158.15	117.56
320	164.38	155.38	112.33
400	167.88	156.58	111.21
500	163.88	150.38	102.87
630	164.62	148.32	98.49
800	157.05	143.25	91.84
1000	158.67	145.97	91.52
1250	162.04	154.54	97.86
1600	160.61	158.61	99.47
2000	158.38	161.38	100.00

TABLE A.4.6

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION

LOCATION Freon Line (Panel 19)
DIRECTION z
PSD NO. 90
ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	148.21	144.81	125.10
40	143.49	148.59	126.33
50	143.75	151.95	127.46
63	155.99	161.89	135.09
80	161.18	164.98	135.79
100	159.35	161.25	129.92
125	166.82	165.72	132.86
160	169.76	166.26	130.14
200	166.20	161.70	123.35
250	164.93	158.33	117.75
320	170.62	161.62	118.57
400	174.51	163.21	117.92
500	169.49	155.99	108.48
630	171.05	154.75	104.93
800	171.56	157.76	105.55
1000	167.25	154.55	100.10
1250	162.42	154.92	98.24
1600	159.20	157.20	98.05
2000	162.85	165.85	103.67

TABLE A.4.7

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Panel 20

DIRECTION x

PSD NO. 94

ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	138.56	143.16	123.44
40	139.93	145.03	122.77
50	137.62	145.82	121.33
63	143.17	149.07	122.26
80	143.48	147.28	118.00
100	144.60	146.50	115.08
125	150.06	148.06	115.31
160	158.57	155.07	118.95
200	159.72	155.22	116.86
250	161.80	155.20	114.62
320	164.39	155.39	112.34
400	167.70	156.40	111.11
500	173.93	160.43	112.91
630	181.91	165.61	115.79
800	188.06	166.26	114.85
1000	177.59	164.89	110.44
1250	177.08	169.58	112.90
1600	173.62	171.62	112.47
2000	168.78	171.78	110.40

TABLE A.4.8

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Panel 4 Center

DIRECTION L

PSD NO. 44

ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	154.28	158.88	139.17
40	156.43	161.53	139.27
50	155.18	163.38	138.89
63	161.23	167.13	140.33
80	167.09	170.89	141.70
100	170.05	171.95	140.52
125	186.53	185.43	151.78
160	185.16	181.66	145.54
200	181.39	176.89	138.54
250	179.53	172.93	132.35
320	182.27	173.27	130.21
400	182.99	171.69	126.40
500	180.59	167.89	119.57
630	182.01	165.71	115.88
800	181.05	167.25	115.03
1000	176.15	163.45	109.00
1250	172.15	164.65	107.97
1600	169.76	166.76	107.61
2000	164.97	167.97	106.59

TABLE A.4.9

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTIONLOCATION Panel 4 Quarter Span
DIRECTION \perp
PSD NO. 75
ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	152.46	157.86	137.35
40	155.17	160.27	138.81
50	153.63	161.83	137.34
63	158.08	164.88	138.88
80	164.19	167.99	138.70
100	166.57	168.47	137.85
125	183.04	181.94	148.28
160	181.11	177.61	141.49
200	178.30	173.80	135.44
250	185.46	178.86	138.27
320	186.53	177.53	134.47
400	185.18	173.88	128.60
500	186.54	173.84	125.52
630	188.66	172.36	122.54
800	186.35	172.55	120.33
1000	182.26	169.56	115.11
1250	182.71	175.21	118.53
1600	181.57	170.57	120.43
2000	173.80	176.80	115.42

TABLE A.4.10

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTIONLOCATION Panel 9
DIRECTION \perp
PSD NO. 93
ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	149.88	154.48	134.77
40	151.66	156.76	134.50
50	152.23	160.43	135.94
63	161.27	167.17	140.37
80	164.83	168.63	139.43
100	168.18	170.88	138.66
125	175.84	173.94	148.29
160	183.34	179.84	143.72
200	180.44	175.94	137.59
250	173.83	167.23	126.64
320	182.92	173.92	130.87
400	184.22	172.92	127.64
500	184.26	170.76	123.24
630	187.26	170.96	121.14
800	180.87	167.87	114.85
1000	181.61	168.91	114.46
1250	181.48	173.98	117.30
1600	176.17	174.17	115.82
2000	172.73	175.73	114.35

TABLE A.4.11

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION

LOCATION Panel 18
DIRECTION \perp
PSD NO. 87
ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	142.18	146.78	126.99
40	138.57	143.67	121.41
50	133.39	141.59	117.10
63	142.18	148.88	121.28
80	143.63	147.43	118.23
100	144.87	145.97	114.55
125	151.82	149.92	116.26
160	158.97	155.47	119.35
200	160.69	156.19	117.84
250	157.76	151.16	118.57
320	160.86	151.26	108.81
400	165.51	154.21	108.92
500	166.86	152.56	105.05
630	167.86	158.76	108.93
800	168.67	154.27	102.86
1000	172.51	159.81	105.36
1250	175.26	167.76	111.08
1600	178.34	176.34	117.19
2000	166.61	169.61	108.23

TABLE A.4.12

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION

LOCATION Panel 18
DIRECTION y
PSD NO. 86
ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	158.94	155.54	135.83
40	154.89	159.19	136.93
50	154.98	163.18	138.61
63	159.51	165.41	138.61
80	166.51	170.31	141.12
100	167.77	169.67	138.25
125	177.24	176.14	142.49
160	184.18	180.68	144.55
200	186.17	181.67	143.31
250	188.91	174.31	133.73
320	177.54	168.54	125.48
400	178.36	167.86	121.78
500	180.88	167.38	119.86
630	182.86	166.56	116.73
800	180.65	166.85	114.64
1000	178.11	165.41	110.96
1250	178.76	171.26	114.58
1600	173.56	171.56	112.41
2000	167.33	170.33	108.95

TABLE A.4.13

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Freon Line Standoff (Panel 19)

DIRECTION \perp

PSD NO. 47

ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	147.67	152.27	132.56
40	150.12	155.22	132.96
50	150.88	159.88	134.59
63	156.37	162.27	135.46
80	159.56	163.36	134.17
100	164.43	166.33	134.91
125	177.27	176.17	142.51
160	183.42	179.02	143.80
200	188.36	175.86	137.51
250	175.42	168.82	128.24
320	182.49	173.49	130.44
400	183.12	171.82	126.53
500	182.65	169.15	121.64
630	182.88	166.58	116.75
800	179.75	165.05	113.74
1000	177.23	164.53	110.88
1250	174.89	167.39	110.71
1600	171.86	169.86	109.91
2000	167.34	170.34	108.96

TABLE A.4.14

STS-3 FLIGHT EQUIVALENT TEST DATA

1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)

ACCELEROMETER DESCRIPTION

LOCATION Freon Line (Panel 19)

DIRECTION y

PSD NO. 89

ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	143.88	148.48	128.77
40	148.48	153.58	131.32
50	152.94	161.14	136.64
63	163.47	169.37	142.57
80	167.19	178.99	141.80
100	157.71	159.61	128.19
125	166.86	164.96	131.30
160	168.22	164.72	128.60
200	165.28	168.78	122.42
250	169.24	162.64	122.06
320	172.40	163.40	120.35
400	171.26	159.96	114.67
500	171.58	158.88	110.56
630	175.56	159.26	109.44
800	171.50	157.70	105.48
1000	167.30	154.60	100.16
1250	166.80	158.50	101.82
1600	159.77	157.77	98.62
2000	156.35	159.35	97.97

TABLE A.4.15

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION

LOCATION Pallet Outer Panel
DIRECTION \perp
PSD NO. 49
ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	157.58	162.18	142.47
40	159.89	164.99	142.73
50	158.82	167.82	142.53
63	163.45	169.35	142.54
80	167.34	171.14	141.95
100	171.64	173.54	142.11
125	182.84	180.94	147.29
160	193.19	189.69	153.56
200	191.26	186.76	148.41
250	186.19	179.59	139.01
320	184.12	175.12	132.06
400	186.14	174.84	129.56
500	187.38	173.88	126.36
630	185.51	169.21	119.38
800	184.69	170.89	118.67
1000	184.65	171.95	117.50
1250	183.41	175.91	119.23
1600	183.29	181.29	122.15
2000	188.66	183.66	122.28

TABLE A.4.16

STS-3 FLIGHT EQUIVALENT TEST DATA
1/3 OBAL / 1/3 OBASDL (dB re 2.9 E-9 GRMS)
ACCELEROMETER DESCRIPTION

LOCATION Pallet Outer Panel
DIRECTION \perp
PSD NO. 50
ZONE NO. 4

1/3 OCTAVE BAND CENTER FREQ	ACOUSTIC TEST	FLIGHT EQUIVALENT	
		AL	ASDL
31	157.87	161.67	141.96
40	159.45	164.55	142.29
50	158.57	166.77	142.28
63	163.66	169.56	142.76
80	167.41	171.21	142.02
100	172.46	174.36	142.93
125	182.72	181.62	147.96
160	193.68	190.18	154.86
200	193.19	188.69	150.34
250	185.76	179.16	138.57
320	185.89	176.89	133.03
400	188.16	176.86	131.57
500	188.76	175.26	127.74
630	187.46	171.16	121.33
800	188.40	174.69	122.47
1000	187.47	174.77	120.32
1250	185.62	178.12	121.44
1600	183.82	181.82	122.68
2000	181.86	184.86	123.48

APPENDIX B

Statistics of STS-3 Flight Equivalent Test Data

B.1. Zone 2

B.2. Zone 3

B.3. Zone 4

B.1. Zone 2 Statistics

TABLE B.1.1

STATISTICS OF STS-3 FLIGHT EQUIVALENT TEST DATA

ZONE 2

1/3- OCT. BAND ACCEL. SPECTRAL DENSITY LEVEL
(dB Re 2.9 E-9 GRMS)
Direction: All Axes

HZ	AVERAGE	VARIANCE	95% CONFIDENCE LIMIT	
			UPPER	LOWER
31.5	138.04	28.00	149.52	128.36
40.0	133.00	24.34	142.87	123.13
50.0	131.30	25.37	141.38	121.23
63.0	133.07	23.07	142.68	123.47
80.0	126.65	20.30	135.67	117.64
100.0	124.43	21.75	133.75	115.10
125.0	124.60	19.91	133.53	115.68
160.0	122.97	25.16	133.00	112.94
200.0	122.70	26.01	132.90	112.50
250.0	119.40	29.87	130.33	108.46
315.0	117.70	32.89	129.17	106.23
400.0	124.13	41.18	136.97	111.30
500.0	123.99	37.12	136.17	111.80
630.0	121.85	32.60	133.27	110.43
800.0	125.54	35.40	137.44	113.64
1000.0	125.26	32.83	136.72	113.80
1250.0	118.46	22.95	128.04	108.88
1600.0	114.98	20.51	124.04	105.93
2000.0	116.64	21.63	125.94	107.34
2500.0	116.64	21.63	125.94	107.34
OAL	156.71		167.63	146.08

TABLE B.1.2

STATISTICS OF STS-3 FLIGHT EQUIVALENT TEST DATA

ZONE 2

1/3- OCT. BAND ACCEL. SPECTRAL DENSITY

$$G^2/HZ$$

Direction: All Axes

HZ	AVERAGE	95% CONFIDENCE LIMIT	
		UPPER	LOWER
31.5	6.6E-004	7.5E-003	5.8E-005
40.0	1.7E-004	1.6E-003	1.7E-005
50.0	1.1E-004	1.2E-003	1.1E-005
63.0	1.7E-004	1.6E-003	1.9E-005
80.0	3.9E-005	3.1E-004	4.9E-006
100.0	2.3E-005	2.0E-004	2.7E-006
125.0	2.4E-005	1.9E-004	3.1E-006
160.0	1.7E-005	1.7E-004	1.7E-006
200.0	1.6E-005	1.6E-004	1.5E-006
250.0	7.3E-006	9.1E-005	5.9E-007
315.0	4.9E-006	6.9E-005	3.5E-007
400.0	2.2E-005	4.2E-004	1.1E-006
500.0	2.1E-005	3.5E-004	1.3E-006
630.0	1.3E-005	1.8E-004	9.3E-007
800.0	3.0E-005	4.7E-004	1.9E-006
1000.0	2.8E-005	3.9E-004	2.0E-006
1250.0	5.9E-006	5.4E-005	6.5E-007
1600.0	2.6E-006	2.1E-005	3.3E-007
2000.0	3.9E-006	3.3E-005	4.6E-007
2500.0	3.9E-006	3.3E-005	4.6E-007
GRMS	2.0E-001	7.0E-001	5.8E-002

B.2. Zone 3 Statistics

TABLE B.2.1

STATISTICS OF STS-3 FLIGHT EQUIVALENT TEST DATA

ZONE 3

1/3- OCT. BAND ACCEL. SPECTRAL DENSITY LEVEL
(dB Re 2.9 E-9 GRMS)
Direction: All Axes

HZ	AVERAGE	VARIANCE	95% CONFIDENCE LIMIT	
			UPPER	LOWER
31.5	140.44	16.71	148.61	132.26
40.0	134.92	15.33	142.75	127.09
50.0	130.90	12.96	138.10	123.70
63.0	130.96	11.66	137.79	124.13
80.0	127.18	16.01	135.18	119.17
100.0	127.97	31.23	139.14	116.79
125.0	124.57	22.65	134.09	115.05
160.0	125.31	29.50	136.17	114.44
200.0	124.88	24.92	134.86	114.89
250.0	116.45	17.75	124.88	108.02
315.0	114.75	20.41	123.79	105.71
400.0	110.86	17.67	119.27	102.45
500.0	110.70	22.24	120.13	101.26
630.0	105.47	15.86	113.43	97.50
800.0	103.06	15.04	110.81	95.30
1000.0	104.11	16.83	112.31	95.90
1250.0	97.29	14.00	104.77	89.80
1600.0	97.65	16.41	105.75	89.55
2000.0	96.01	15.27	103.82	88.19
2500.0	96.01	15.27	103.82	88.19
OAL	153.23		161.92	144.89

TABLE B.2.2

STATISTICS OF STS-3 FLIGHT EQUIVALENT TEST DATA

ZONE 3

1/3- OCT. BAND ACCEL. SPECTRAL DENSITY

$$G^2/HZ$$

Direction: All Axes

HZ	AVERAGE	95% CONFIDENCE LIMIT	
		UPPER	LOWER
31.5	9.3E-004	6.1E-003	1.4E-004
40.0	2.6E-004	1.6E-003	4.3E-005
50.0	1.0E-004	5.4E-004	2.0E-005
63.0	1.0E-004	5.1E-004	2.2E-005
80.0	4.4E-005	2.8E-004	7.0E-006
100.0	5.3E-005	6.9E-004	4.0E-006
125.0	2.4E-005	2.2E-004	2.7E-006
160.0	2.9E-005	3.5E-004	2.3E-006
200.0	2.6E-005	2.6E-004	2.6E-006
250.0	3.7E-006	2.6E-005	5.3E-007
315.0	2.5E-006	2.0E-005	3.1E-007
400.0	1.0E-006	7.1E-006	1.5E-007
500.0	9.9E-007	8.7E-006	1.1E-007
630.0	3.0E-007	1.9E-006	4.7E-008
800.0	1.7E-007	1.0E-006	2.9E-008
1000.0	2.2E-007	1.4E-006	3.3E-008
1250.0	4.5E-008	2.5E-007	8.0E-009
1600.0	4.9E-008	3.2E-007	7.6E-009
2000.0	3.4E-008	2.0E-007	5.5E-009
2500.0	3.4E-008	2.0E-007	5.5E-009
GRMS	1.3E-001	3.6E-001	5.1E-002

B.3. Zone 4 Statistics

ORIGINAL PAGE
OF 2000

TABLE B.3.1

STATISTICS OF STS-3 FLIGHT EQUIVALENT TEST DATA

ZONE 4

1/3- OCT. BAND ACCEL. SPECTRAL DENSITY LEVEL
(dB Re 2.9 E-9 GRMS)
Direction: Out of Plane

HZ	AVERAGE	VARIANCE	95% CONFIDENCE LIMIT	
			UPPER	LOWER
31.5	139.04	12.99	145.25	133.84
40.0	139.35	12.83	145.52	133.19
50.0	139.69	11.74	145.54	133.84
63.0	140.19	10.51	146.68	133.71
80.0	140.17	10.51	146.65	133.68
100.0	138.89	12.53	145.97	131.81
125.0	146.29	14.39	153.88	138.71
160.0	148.33	16.62	156.48	140.18
200.0	143.88	17.14	152.16	135.60
250.0	134.82	13.56	142.19	127.46
315.0	130.58	11.59	137.39	123.77
400.0	127.21	12.10	134.16	120.25
500.0	123.33	12.54	130.41	116.25
630.0	118.73	11.68	125.57	111.90
800.0	117.26	13.51	124.61	109.90
1000.0	114.59	14.23	122.14	107.05
1250.0	116.55	13.01	123.76	109.34
1600.0	118.09	13.71	125.50	110.68
2000.0	117.30	16.60	125.45	109.15
2500.0	117.25	16.76	125.44	109.05
OAL	167.82		175.69	160.02

TABLE B.3.2

STATISTICS OF STS-3 FLIGHT EQUIVALENT TEST DATA

ZONE 4

1/3- OCT. BAND ACCEL. SPECTRAL DENSITY

$$G^2/HZ$$

Direction: Out of Plane

HZ	AVERAGE	95% CONFIDENCE LIMIT	
		UPPER	LOWER
31.5	5.4E-004	2.8E-003	1.0E-004
40.0	5.8E-004	3.0E-003	1.1E-004
50.0	6.2E-004	3.3E-003	1.3E-004
63.0	8.8E-004	3.9E-003	2.0E-004
80.0	8.7E-004	3.9E-003	2.0E-004
100.0	6.5E-004	3.3E-003	1.3E-004
125.0	3.6E-003	2.1E-002	6.2E-004
160.0	5.7E-003	3.7E-002	8.8E-004
200.0	2.1E-003	1.4E-002	3.1E-004
250.0	2.6E-004	1.4E-003	4.7E-005
315.0	9.6E-005	4.6E-004	2.0E-005
400.0	4.4E-005	2.2E-004	8.9E-006
500.0	1.0E-005	9.2E-005	3.5E-006
630.0	6.3E-006	3.0E-005	1.3E-006
800.0	4.5E-006	2.4E-005	8.2E-007
1000.0	2.4E-006	1.4E-005	4.3E-007
1250.0	3.8E-006	2.0E-005	7.2E-007
1600.0	5.4E-006	3.0E-005	9.8E-007
2000.0	4.5E-006	3.0E-005	6.9E-007
2500.0	4.5E-006	2.9E-005	6.8E-007
GRMS	7.1E-001	1.8E+000	2.9E-001

TABLE B.3.3

STATISTICS OF STS-3 FLIGHT EQUIVALENT TEST DATA

ZONE 4

1/3- OCT. BAND ACCEL. SPECTRAL DENSITY LEVEL
(dB Re 2.9×10^{-9} GRMS)
Direction: In Plane

HZ	AVERAGE	VARIANCE	95% CONFIDENCE LIMIT	
			UPPER	LOWER
31.5	125.27	10.32	131.70	118.85
40.0	123.72	8.93	129.69	117.74
50.0	124.48	11.15	131.15	117.80
63.0	129.41	14.71	137.08	121.74
80.0	128.52	19.54	137.36	119.68
100.0	123.34	17.01	131.50	115.09
125.0	126.87	14.23	134.41	119.32
160.0	126.75	12.79	133.90	119.60
200.0	121.10	11.39	127.84	114.35
250.0	117.18	10.28	123.59	110.77
315.0	114.07	11.65	120.90	107.24
400.0	114.28	11.64	121.10	107.45
500.0	112.91	12.81	120.07	105.75
630.0	113.85	11.77	120.72	106.99
800.0	111.22	10.66	117.75	104.69
1000.0	107.38	12.31	114.39	100.36
1250.0	107.92	14.90	115.64	100.20
1600.0	106.52	15.99	114.52	98.52
2000.0	105.84	12.71	112.97	98.71
2500.0	104.73	13.63	112.12	97.35
OAL	150.01		157.50	142.64

TABLE B.3.4

STATISTICS OF STS-3 FLIGHT EQUIVALENT TEST DATA

ZONE 4

1/3- OCT. BAND ACCEL. SPECTRAL DENSITY

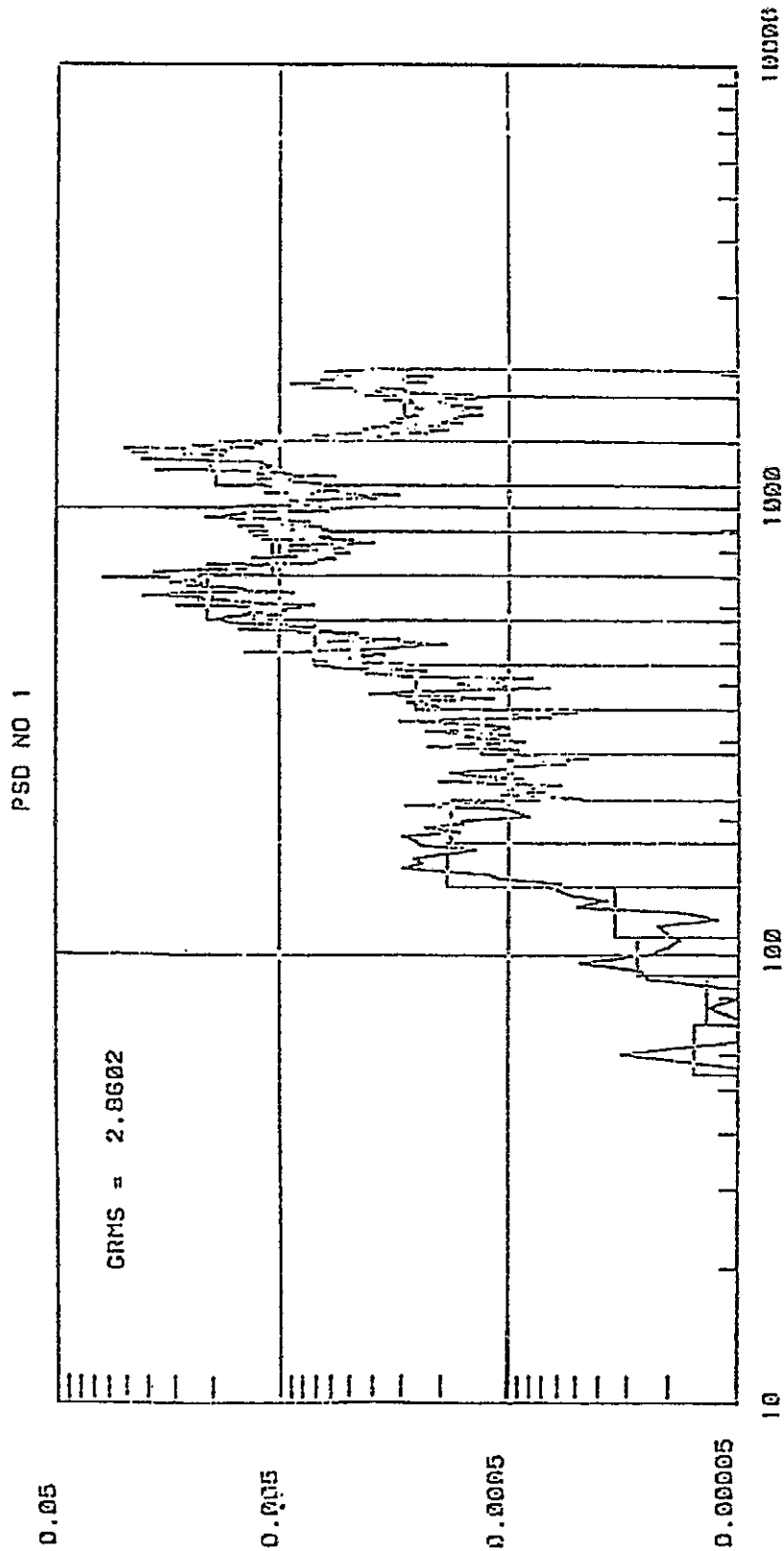
$$G^2/HZ$$

Direction: In Plane

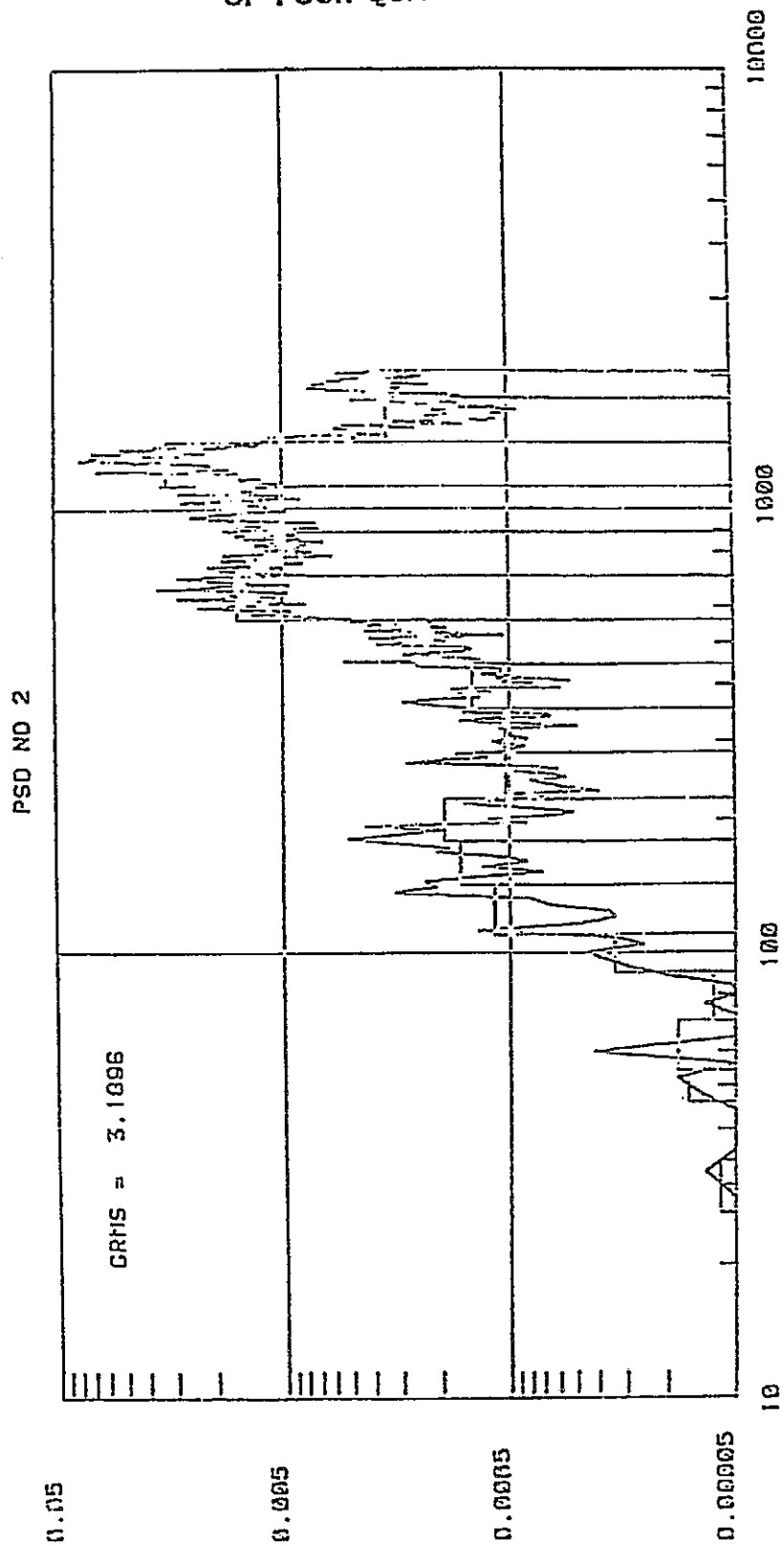
HZ	AVERAGE	95% CONFIDENCE LIMIT	
		UPPER	LOWER
31.5	2.8E-005	1.2E-004	5.5E-006
40.0	2.0E-005	7.8E-005	5.0E-006
50.0	2.4E-005	1.1E-004	5.1E-006
63.0	7.3E-005	4.3E-004	1.3E-005
80.0	6.0E-005	4.6E-004	7.8E-006
100.0	1.8E-005	1.2E-004	2.7E-006
125.0	4.1E-005	2.3E-004	7.2E-006
160.0	4.0E-005	2.1E-004	7.7E-006
200.0	1.1E-005	5.1E-005	2.3E-006
250.0	4.4E-006	1.9E-005	1.0E-006
315.0	2.1E-006	1.0E-005	4.5E-007
400.0	2.3E-006	1.1E-005	4.7E-007
500.0	1.6E-006	8.5E-006	3.2E-007
630.0	2.0E-006	9.9E-006	4.2E-007
800.0	1.1E-006	5.0E-006	2.5E-007
1000.0	4.6E-007	2.3E-006	9.1E-008
1250.0	5.2E-007	3.1E-006	8.8E-008
1600.0	3.8E-007	2.4E-006	6.0E-008
2000.0	3.2E-007	1.7E-006	6.2E-008
2500.0	2.5E-007	1.4E-006	4.6E-008
GRMS	9.2E-002	2.2E-001	3.8E-002

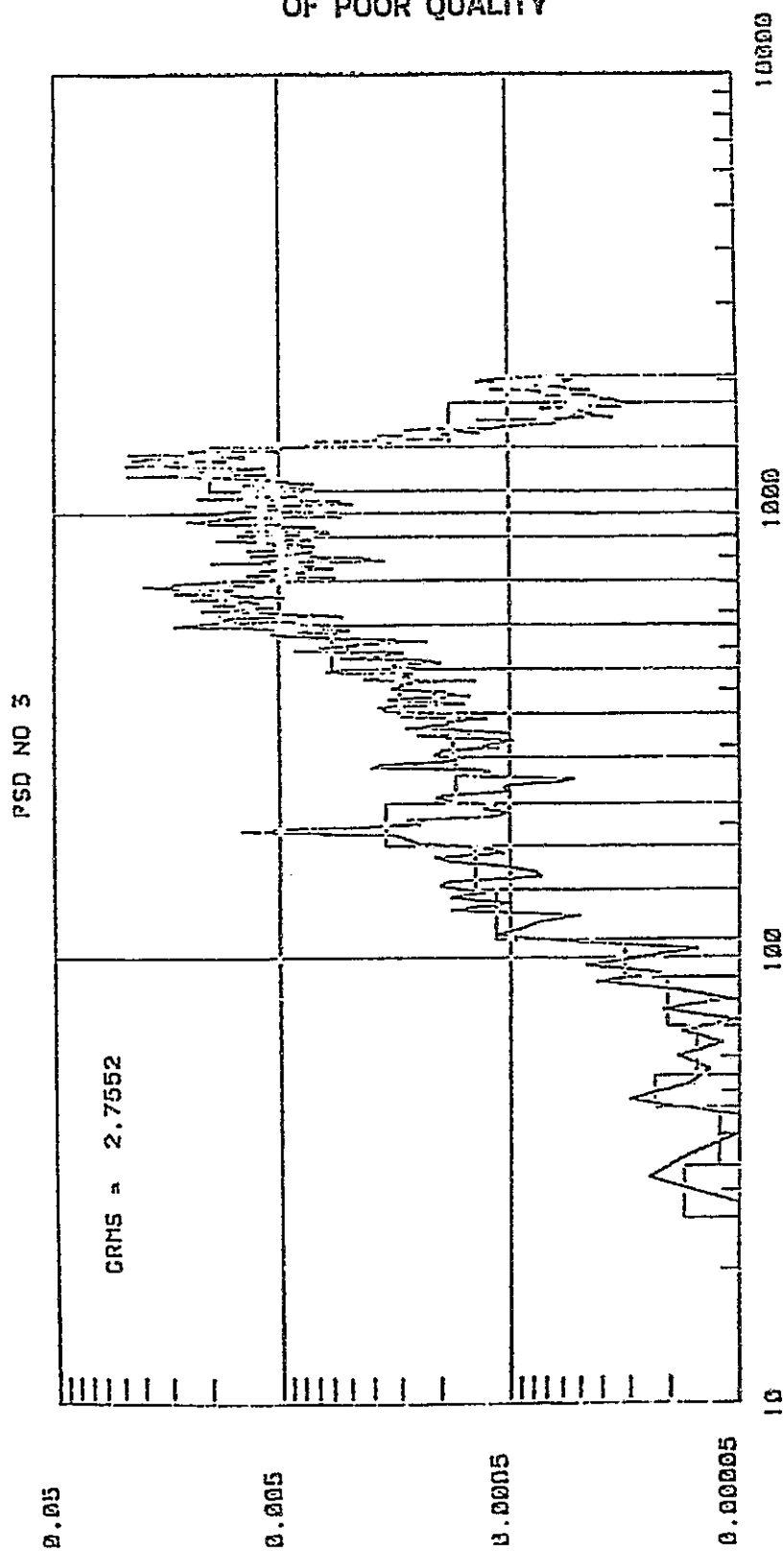
APPENDIX C

Sample Comparisons of Bandwidth Effects
on Acceleration Spectral Density
1/3 Octave Bandwidth Vs. 4 Hz Bandwidth
(Data From Acoustic Test)

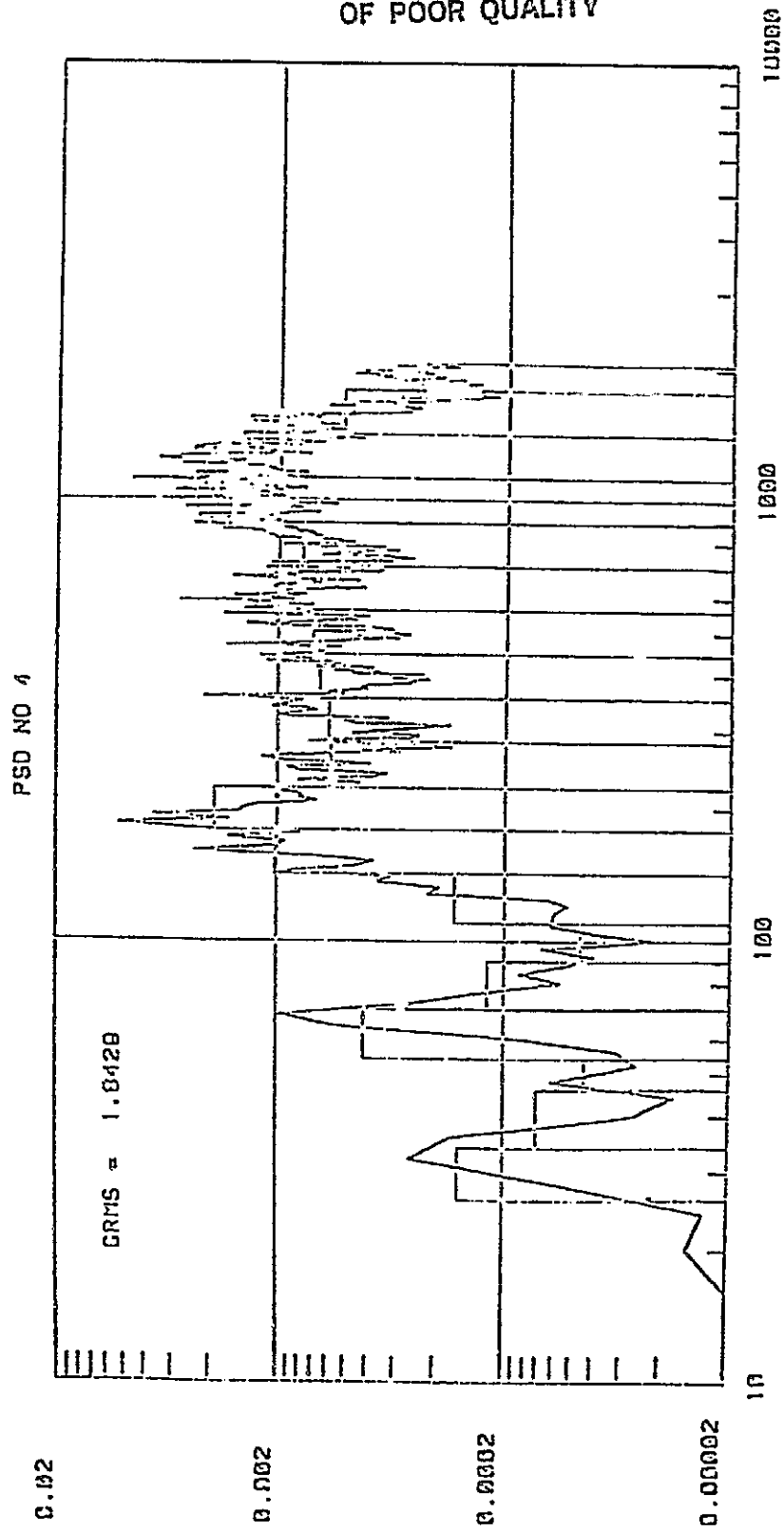


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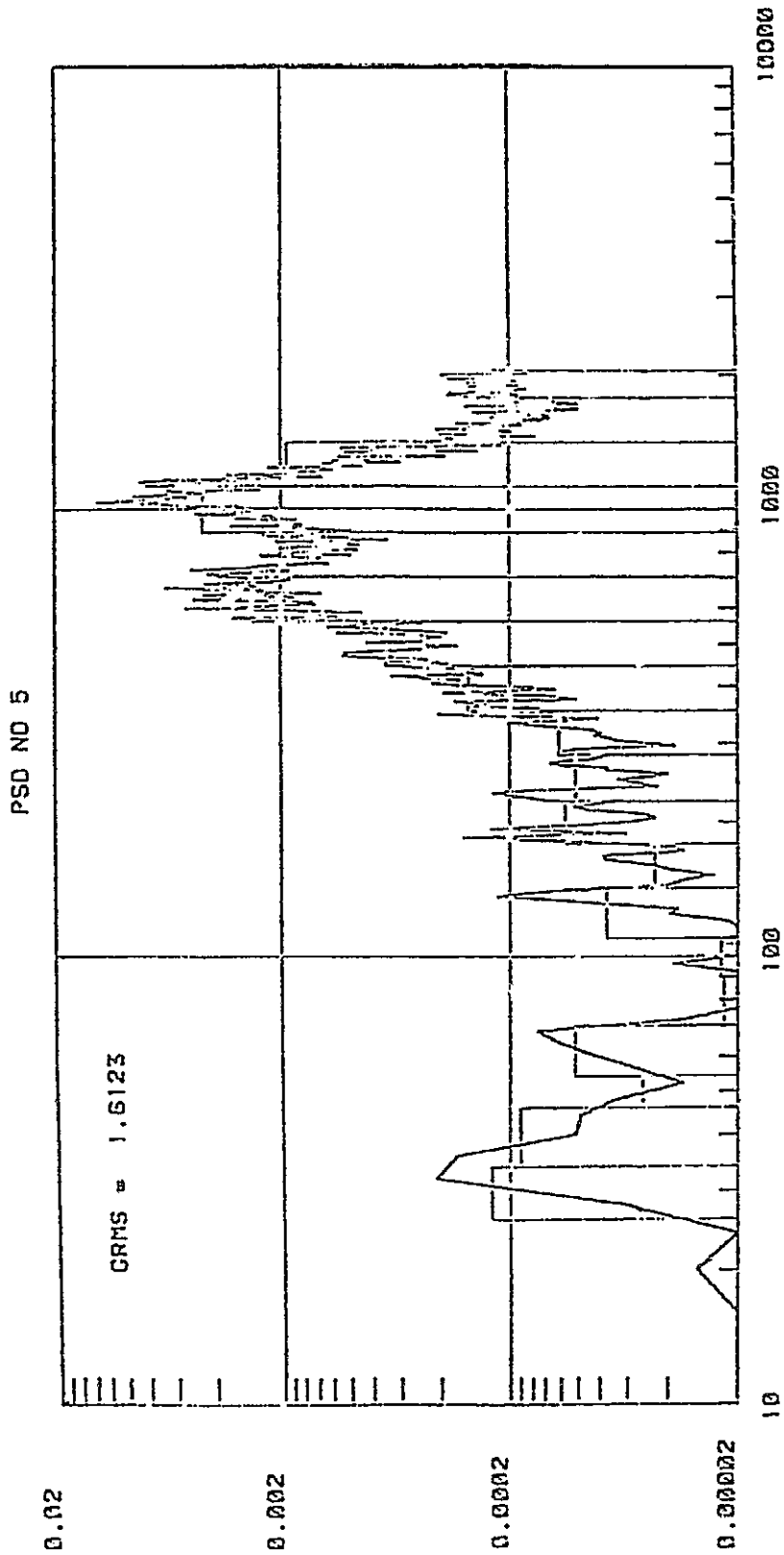


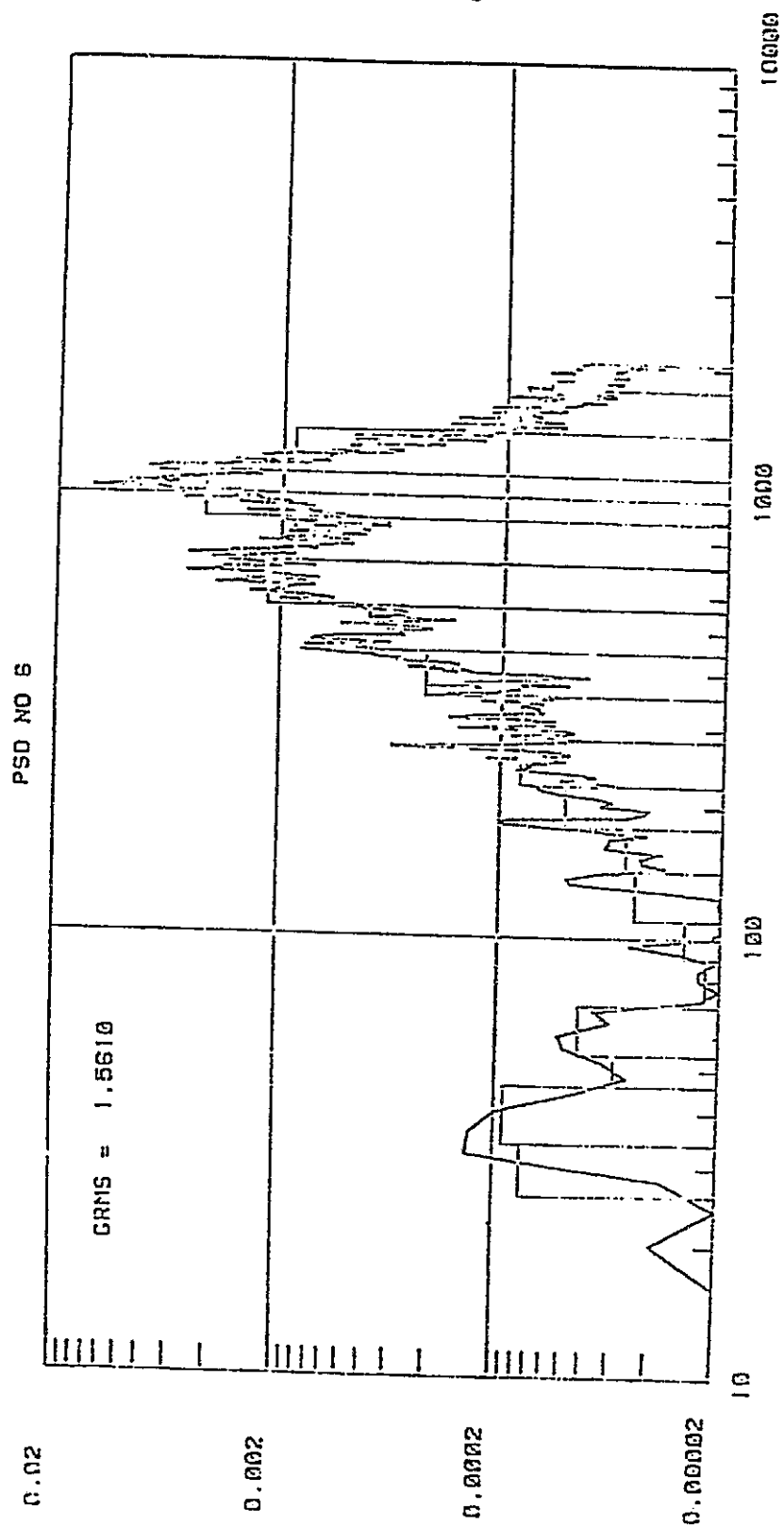


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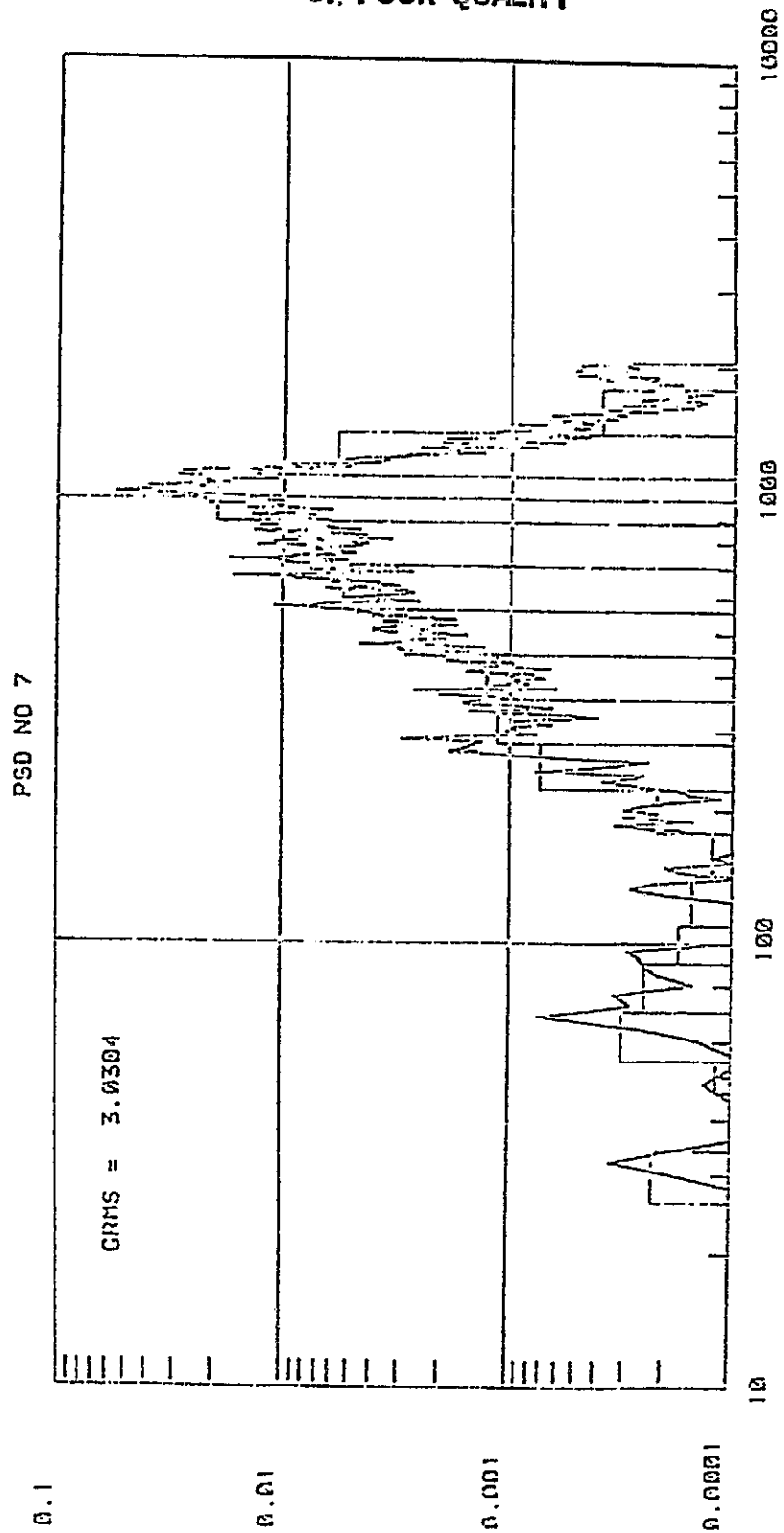


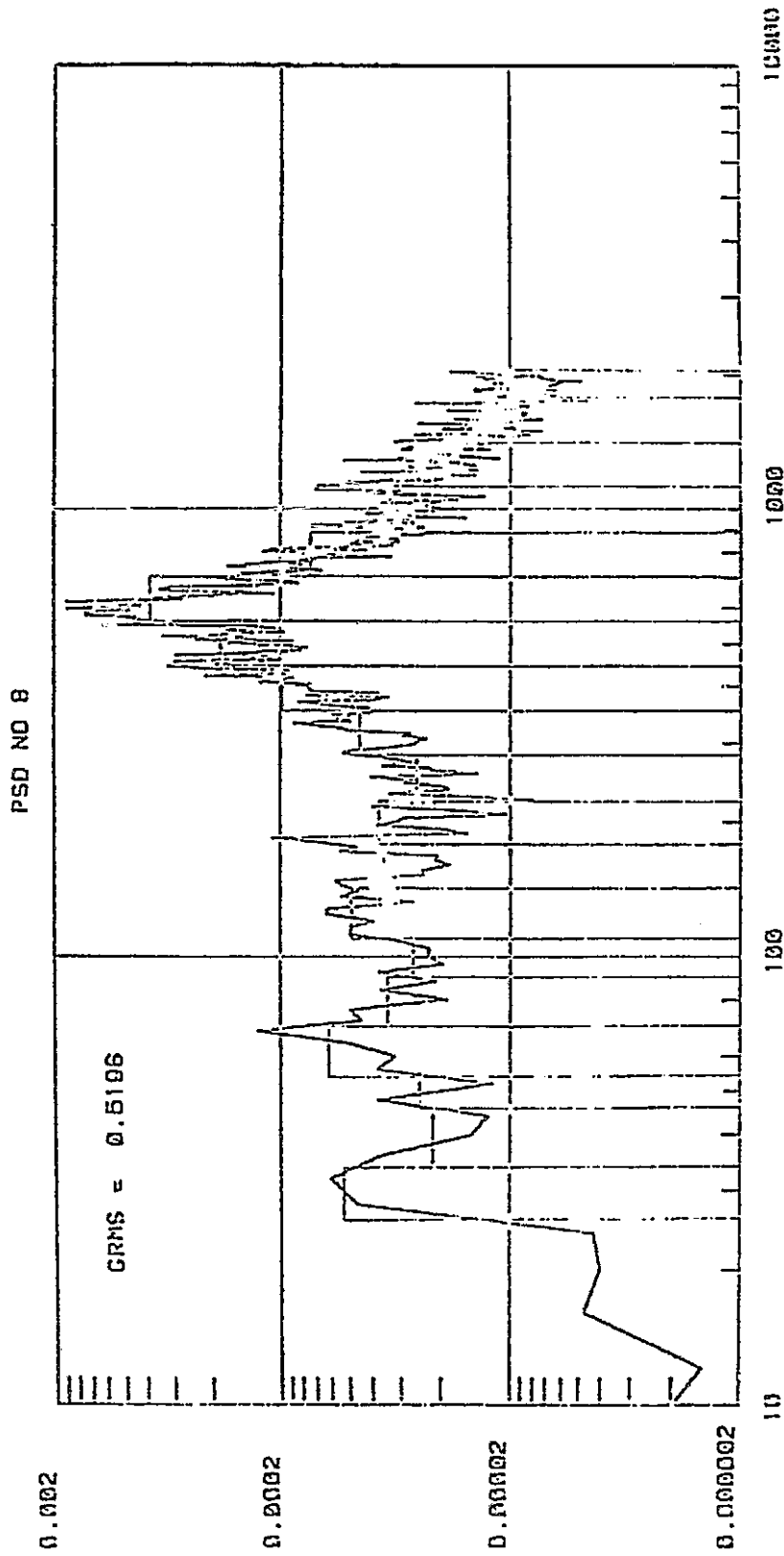
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